

Halstuff (BiBTeX version)

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@ARTICLE{HJM:Met62,
  AUTHOR = "Hans Mueller and Harold Metcalf",
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  JOURNAL = "J. Opt. Soc. Am.",
  VOLUME = "52", NUMBER = "", PAGES = "1317", YEAR = "1962" }

@ARTICLE{HJM:Met65,
  AUTHOR = "Harold Metcalf",
  TITLE = "The Stiles-Crawford Apodization",
  JOURNAL = "J. Opt. Soc. Am.",
  VOLUME = "55", NUMBER = "", PAGES = "72", YEAR = "1965" }

@ARTICLE{HJM:Met66,
  AUTHOR = "Harold Metcalf and J. C. Baird",
  TITLE = "Circular Polarization of Vacuum Ultraviolet Light by Piezobirefringence",
  JOURNAL = appo,
  VOLUME = "5", NUMBER = "", PAGES = "1407", YEAR = "1966" }

@INPROCEEDINGS{HJM:Met68,
  AUTHOR = "Harold Metcalf",
  TITLE = "Solid State Phys., Nuclear Phys., and Particle Phys.",
  BOOKTITLE = "Proc. of the Ninth Latin American School of Phys.",
  EDITOR = "Igor Saavedra",
  PUBLISHER = "W. A. Benjamin, Inc., NY",
  PAGES = "", YEAR = "1968" }

@ARTICLE{HJM:Bra68,
  AUTHOR = "H. Metcalf and J. Brandenberger and J.C. Baird",
  TITLE = "Measurement of the Sommerfeld Fine Structure Constant by Level Crossing in
Atomic Hydrogen",
  JOURNAL = phyrl,
  VOLUME = "21", NUMBER = "", PAGES = "165", YEAR = "1968" }

@ARTICLE{HJM:Mar69,
  AUTHOR = "A. Marshall and R. L. deZafra and H. Metcalf",
  TITLE = "Level Crossing Spectroscopy in Molecules: Application to OH Free Radical",
  JOURNAL = phyrl,
  VOLUME = "22", NUMBER = "", PAGES = "445", YEAR = "1969" }

@INPROCEEDINGS{HJM:Bai69a,
  AUTHOR = "J. C. Baird and H. Metcalf and J. Brandenberger and K. I. Gondaira",
  TITLE = "A Measurement of the Sommerfeld Fine Structure Constant by
Level Crossing in Atomic Hydrogen",
  BOOKTITLE = "Phys. of One and Two Electron Atoms",
  EDITOR = "F. Bopp and H. Klienpoppen",
  PUBLISHER = "North-Holland Publishing Company - Amsterdam",
  PAGES = "139", YEAR = "1969" }

@INPROCEEDINGS{HJM:Bai69b,
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  TITLE = "A Measurement of the Fine Structure Constant by Level Crossing in
Atomic Hydrogen",
  BOOKTITLE = "in Proc. of the First International Conf. on Atomic Phys.",
  EDITOR = "V. Cohen and G. zuPutlitz",
  PUBLISHER = "",
  PAGES = "3", YEAR = "1969" }

@ARTICLE{HJM:Met70,
  AUTHOR = "Harold Metcalf",
  TITLE = "PDP-8L Interface to TMC-404 Multichannel Analyzer",
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@ARTICLE{HJM:Met71,
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@Article{HJM:dez71b,
  title = {Measurement of Lifetime and $g$ Factors by Level Crossing and Optical
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  author = {deZafra, Robert L. and Marshall, Alan and Metcalf, Harold },
  journal = phyra,
  volume = {3},
  number = {5},
  pages = {1557--1567},
  numpages = {10},
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  doi = {10.1103/PhysRevA.3.1557},
  publisher = {American Physical Society}
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@INPROCEEDINGS{HJM:Bai71,
  AUTHOR = "J. C. Baird and J. Brandenberger and K. Gondaira and H. Metcalf",
  TITLE = "Determination of the Atomic Hydrogen Fine Structure by Level
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  Constant",
  BOOKTITLE = "Precision Measurements and Fundamental Constants ",
  EDITOR = "D. Langenberg and B. Taylor",
  PUBLISHER = "NBS",
  PAGES = "345", YEAR = "1971" }

@ARTICLE{HJM:Met72,
  AUTHOR = "Harold Metcalf",
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  JOURNAL = "The Physics Teacher",
  VOLUME = "10", NUMBER = "", PAGES = "98", YEAR = "1972" }

@ARTICLE{HJM:Bai72,
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  JOURNAL = phyra,
  VOLUME = "5", NUMBER = "", PAGES = "564", YEAR = "1972" }

@ARTICLE{HJM:Sch73a,
  AUTHOR = "P. Schenck and H. Metcalf",
  TITLE = "Low Cost Nitrogen Laser Design for Dye Laser Pumping",
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  VOLUME = "12", NUMBER = "", PAGES = "183", YEAR = "1973" }

@ARTICLE{HJM:Bre73a,
  AUTHOR = "G. Sprouse and R. Brenn and H. A. Calvin and H. Metcalf",
  TITLE = "Observations with Oriented Nuclei of One-Electron Atomic
  of  $^{19}\text{F}$ ",
  JOURNAL = phyr1,
  VOLUME = "30", NUMBER = "", PAGES = "419", YEAR = "1973" }

@ARTICLE{HJM:Sch73b,
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  TITLE = "Time Resolved Fluorescence from Ba and Ca Excited by a
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  JOURNAL = phyr1,
  VOLUME = "31", NUMBER = "", PAGES = "189", YEAR = "1973" }

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  AUTHOR = "R. Brenn and H. Calvin and H. Metcalf and G. Sprouse and L. Young",
  TITLE = "Atomic g-Factors of Hydrogen-like  $Z^{19}F$ ",
  BOOKTITLE = "Atomic Physics 3",
  EDITOR = "Smith and Walters",
  PUBLISHER = "Plenum Press, NY",
  PAGES = "657", YEAR = "1973" }

@INPROCEEDINGS{HJM:Die74,
  AUTHOR = "D. Dietrich and B. DaCosta and R. deZafra and H. Metcalf",
  TITLE = "The Lamb Shift in  $Z^7Li$ ",
  BOOKTITLE = "Fourth International Conference on Atomic Physics, Heidelberg,
Germany",
  EDITOR = "G. zuPutlitz et al.",
  PUBLISHER = "Plenum Press",
  PAGES = "60", YEAR = "1974" }

@ARTICLE{HJM:Fel78,
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@INPROCEEDINGS{HJM:Dav78,
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  BOOKTITLE = "Fourth International Conference on Spectral Line Shapes",
  EDITOR = "G.W.Drake",
  PUBLISHER = "Windsor, Ontario",
  PAGES = "56", YEAR = "1978" }

@ARTICLE{HJM:Lit78,
  AUTHOR = "M. Littman and H. Metcalf",
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  JOURNAL = appo,
  VOLUME = "17", NUMBER = "", PAGES = "2224", YEAR = "1978" }

@Article{HJM:Leb79b,
  title = {Measurement of  $g$  Factors by Quantum Beats in the OH Free Radical},
  author = {Lebow, Paul and Raab, Frederick and Metcalf, Harold},
  journal = {Phys. Rev. Lett.},
  volume = {42},
  number = {2},
  pages = {85--88},
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}

@ARTICLE{HJM:Dav79b,
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  JOURNAL = phyra,
  VOLUME = "19", NUMBER = "", PAGES = "700", YEAR = "1979" }

@BOOK{HJM:Met80,
  AUTHOR = "Harold Metcalf",
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@ARTICLE{HJM:Met80a,
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@ARTICLE{HJM:Met80b,
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@ARTICLE{HJM:Raa80,
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  TITLE = "Quantum Beat Spectroscopy of the A2 \Sigma State of the OH Free Radical",
  JOURNAL = optl,
  VOLUME = "5", NUMBER = "", PAGES = "427", YEAR = "1980" }

@ARTICLE{HJM:Phi80,
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  JOURNAL = optl,
  VOLUME = "5", NUMBER = "", PAGES = "540", YEAR = "1980" }

@BOOK{HJM:Met80c,
  AUTHOR = "Harold Metcalf",
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  ADDRESS = "",
  YEAR = "1980",
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@ARTICLE{HJM:Luk81a,
  AUTHOR = " T. S. Luk and L. DiMauro and M. Feldman and H. Metcalf",
  TITLE = "Coherence in Photoionization",
  JOURNAL = phyra,
  VOLUME = "24", NUMBER = "", PAGES = "864", YEAR = "1981" }

@ARTICLE{HJM:Luk81b,
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  JOURNAL = phyr1,
  VOLUME = "47", NUMBER = "", PAGES = "83", YEAR = "1981" }

@ARTICLE{HJM:Raa81,
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  VOLUME = "24", NUMBER = "", PAGES = "3120", YEAR = "1981" }

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  VOLUME = "47", NUMBER = "", PAGES = "1726", YEAR = "1981" }

@ARTICLE{HJM:Phi82,
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TITLE = "Light Shifts in Quantum Beat Spectroscopy",
 JOURNAL = phyrv,
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@ARTICLE{HJM:DiM82,
 AUTHOR = " L. DiMauro and T. Bergeman and P. McNicholl and H. Metcalf",
 TITLE = "Continuum Stark Spectroscopy. Proceedings of Colloque International.
 Colloque {C-2, supplement 11.}",
 JOURNAL = "Journal de Physique",
 VOLUME = "43", NUMBER = "", PAGES = "167", YEAR = "1982" }

@ARTICLE{HJM:Pro82,
 AUTHOR = "J. Prodan and W. Phillips and H. Metcalf",
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 JOURNAL = phyrl,
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@ARTICLE{HJM:Pro83,
 AUTHOR = "W. Phillips J. Prodan and H. Metcalf",
 TITLE = "Laser Cooling of Free Neutral Atoms in an Atomic Beam",
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 VOLUME = "", NUMBER = "", PAGES = "162", YEAR = "1983" }

@INPROCEEDINGS{HJM:Fel84,
 AUTHOR = "M. Feldman and T. Breeden and L. DiMauro and T. Dong and H.
 Metcalf",
 TITLE = "Preliminary Measurement of the $J=0$ to $J=2$ Fine Structure Interval
 in the 3^3P State of Helium",
 BOOKTITLE = "Precision Measurements and Fundamental Constants II",
 EDITOR = "B. N. Taylor and W. Phillips",
 PUBLISHER = "Natl. Bur. Stand. (U.S.), Spec. Publ. 617",
 PAGES = "153", YEAR = "1984" }

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 PUBLISHER = "Natl. Bur. Stand. (U.S.), Spec. Publ. 617",
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 EDITOR = "R.M. Besancon",
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 YEAR = "1984",
 PAGES = "137",
 NOTE = "Third Edition" }

@ARTICLE{HJM:Phi84a,
 AUTHOR = "W. Phillips and J. Prodan and H. Metcalf",
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 JOURNAL = "Prog. Quant. Electr.",
 VOLUME = "8", NUMBER = "", PAGES = "119", YEAR = "1984" }

@ARTICLE{HJM:Met84a,
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 JOURNAL = "Prog. Quant. Electr.",
 VOLUME = "8", NUMBER = "", PAGES = "169", YEAR = "1984" }

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Dalibard",
  TITLE = "Stopping Atoms with Laser Light",
  JOURNAL = physrl,
  VOLUME = "54", NUMBER = "", PAGES = "992", YEAR = "1985" }

@ARTICLE{HJM:Bre85,
  AUTHOR = "Dong-Hai Yang and Tom Breeden and Harold Metcalf",
  TITLE = "Home-Built Nd:YAG Laser for General Laser Laboratory Use",
  JOURNAL = appo,
  VOLUME = "24", NUMBER = "", PAGES = "1899", YEAR = "1985" }
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@ARTICLE{HJM:Yan85,
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  Sublevels of 3$^3$P Helium",
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  VOLUME = "32", NUMBER = "", PAGES = "2249", YEAR = "1985" }

@ARTICLE{HJM:Phi85a,
  AUTHOR = "H. Metcalf and W. Phillips",
  TITLE = "Laser Cooling of Atomic Beams",
  JOURNAL = "Comments on Atomic and Molecular Physics",
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@INPROCEEDINGS{HJM:Liu85a,
  AUTHOR = "J-Y. Liu and P. McNichol and D. Harmin and T. Bergeman and H.
  Metcalf",
  TITLE = "Widths and Shapes of Stark Resonances in Sodium Above the Saddle
  Point",
  BOOKTITLE = "Atomic Excitation and Recombination in External Fields",
  EDITOR = "M. Nayfeh and C. W. Clark",
  PUBLISHER = "Gordon and Breach",
  PAGES = "283", YEAR = "1985" }

@INPROCEEDINGS{HJM:Phi85b,
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  TITLE = "Laser Cooled Atomic Beams",
  BOOKTITLE = "Atomic Physics 9",
  EDITOR = "R. van Dyke and E. Norval Fortson",
  PUBLISHER = "World Scientific Press",
  PAGES = "338-361", YEAR = "1984" }

@ARTICLE{HJM:McN85,
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  VOLUME = "24", NUMBER = "", PAGES = "2757", YEAR = "1985" }

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  VOLUME = "55", NUMBER = "", PAGES = "189", YEAR = "1985" }

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  VOLUME = "10", NUMBER = "", PAGES = "733", YEAR = "1985" }

@ARTICLE{HJM:Mig85,
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TITLE = "First Observation of Magnetically Trapped Neutral Atoms",
JOURNAL = physrl,
VOLUME = "54", NUMBER = "", PAGES = "2596", YEAR = "1985" }

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@INPROCEEDINGS{HJM:Mig85a,
AUTHOR = "A. Migdall and T. Bergeman and J. Dalibard and H. Metcalf and W.
Phillips and J. Prodan and I. So",
TITLE = "Cooling, Stopping, and Trapping Atoms",
BOOKTITLE = "Laser Spectroscopy VII",
EDITOR = "T. W. Hansch and Y. R. Shen",
PUBLISHER = "Springer Verlag",
PAGES = "", YEAR = "1985" }

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AUTHOR = "D-H. Yang and P. McNicholl and H. Metalf",
TITLE = "Precision Measurement of Crossing Between the (J,M) = (0,0)
and (1,1) Sublevels and Fine Structure Splitting in $3s^2 3p$ Helium",
JOURNAL = phyra,
VOLUME = "33", NUMBER = "", PAGES = "1725", YEAR = "1986" }

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@INPROCEEDINGS{HJM:Liu86,
AUTHOR = "J -Y. Liu and P. McNicholl and J. Ivri and T. Bergeman and H.
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TITLE = "Shapes and Widths of Stark Resonances in Sodium",
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@ARTICLE{HJM:Met86a,
AUTHOR = "H. Metcalf and W. Phillips",
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JOURNAL = "Metrologia",
VOLUME = "22", NUMBER = "", PAGES = "271", YEAR = "1986" }

@INPROCEEDINGS{HJM:Phi86,
AUTHOR = "W. Phillips and A. Migdall and H. Metcalf",
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BOOKTITLE = "Advances in Laser Science",
EDITOR = "W. Stwalley and M. Lapp",
PUBLISHER = "",
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@INPROCEEDINGS{HJM:Met87a,
AUTHOR = "W. Phillips and H. Metcalf",
TITLE = "Atomic Beams",
BOOKTITLE = "McGraw Hill Yearbook of Science & Technology",
EDITOR = "S. Parker",
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PAGES = "97", YEAR = "1987" }

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@INPROCEEDINGS{HJM:Met87b,  
  AUTHOR = "Harold Metcalf",  
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  BOOKTITLE = "Advances in Laser Science III",  
  PUBLISHER = "Am. Phys. Soc.",  
  EDITOR = "A. Tam and J. Gole and W. Stwalley",  
  PAGES = "304", YEAR = "1987" }  
  
@INPROCEEDINGS{HJM:McN87,  
  AUTHOR = "P. McNicholl and T. Bergeman and H. Metcalf",  
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Point",  
  BOOKTITLE = "Spectral Line Shapes",  
  EDITOR = "R. J. Exton",  
  PUBLISHER = "A. Deepak, pub., Hampton, VA",  
  PAGES = "107", YEAR = "1987" }  
  
@ARTICLE{HJM:Ber87,  
  AUTHOR = "T. Bergeman and G. Erez and H. Metcalf",  
  TITLE = "Magnetostatic Trapping Fields for Neutral Atoms",  
  JOURNAL = phyra,  
  VOLUME = "35", NUMBER = "", PAGES = "1535", YEAR = "1987"  
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@ARTICLE{HJM:Met87c,  
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  AUTHOR = "W. Phillips and H. Metcalf",  
  TITLE = "Cooling and Trapping Atoms",  
  JOURNAL = "Scientific American",  
  VOLUME = "", MONTH = "March", NUMBER = "", PAGES = "50\,", YEAR = "1987" }  
  
@INPROCEEDINGS{HJM:McN87a,  
  AUTHOR = "J. Dalibard and A. Heidmann and C. Salomon and A. Aspect and H.  
Metcalf and C. Cohen-Tannoudji",  
  TITLE = "Atomic Motion in a Resonant Laser Standing Wave",  
  BOOKTITLE = "Fundamentals of Quantum Optics II",  
  EDITOR = "F. Ehlotzky",  
  PUBLISHER = "Springer-Verlag",  
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@INPROCEEDINGS{HJM:Ber87a,  
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  BOOKTITLE = "Advances in Laser Science II",  
  EDITOR = "M. Lapp, W. Stwalley and G. Kenney-Wallace",  
  PUBLISHER = "Am. Inst. Physics Conf. Proc.",  
  PAGES = "332", YEAR = "1987" }  
  
@ARTICLE{HJM:Sal87,  
  AUTHOR = "C. Salomon and J. Dalibard and A. Aspect and H. Metcalf and C. Cohen-  
Tannoudji",  
  TITLE = "Channeling Atoms in a Laser Standing Wave",  
  JOURNAL = phyr1,  
  VOLUME = "59", NUMBER = "", PAGES = "1659", YEAR = "1987" }  
  
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  VOLUME = "37", NUMBER = "", PAGES = "3302", YEAR = "1987" }
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@ARTICLE{HJM:Let88,
  AUTHOR = "P. Lett and R. Watts and C. Westbrook and W. Philips and P. Gould and H.
  Metcalf",
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  JOURNAL = phyrl,
  VOLUME = "61", NUMBER = "", PAGES = "169", YEAR = "1988" }

@ARTICLE{HJM:Asp88,
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  Metcalf",
  TITLE = "Manipulation Laser D'Atomes Neutres",
  JOURNAL = "Annales de Phys. (Paris) Colloque ",
  VOLUME = "1", NUMBER = "", PAGES = "13, 3", YEAR = "1988" }

@INPROCEEDINGS{HJM:Met89,
  AUTHOR = "Harold Metcalf",
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  EDITOR = "S. Parker",
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@INPROCEEDINGS{HJM:Met89a,
  AUTHOR = "Harold Metcalf",
  TITLE = "Proposal for Magnetic Trapping of Laser-Cooled  $2^3\text{S}$  Helium",
  BOOKTITLE = "Spin Polarized Quantum Systems",
  EDITOR = "S. Stringari",
  PUBLISHER = "World Scientific Pub., Singapore",
  PAGES = "279", YEAR = "1989" }

@ARTICLE{HJM:Sha89a,
  AUTHOR = "S -Q. Shang and H. Metcalf",
  TITLE = "Narrow Band, High Power Light from Diode Lasers",
  JOURNAL = appo,
  VOLUME = "28", NUMBER = "", PAGES = "1618", YEAR = "1989" }

@ARTICLE{HJM:Don89,
  AUTHOR = "Dong-Hai Yang and David Lieberman and Peter van der Straten and Thomas
  Bergeman and Harold Metcalf",
  TITLE = "Precision Mapping of Electrostatic Fields Using Interference Narrowed Stark
  Resonances",
  JOURNAL = phyra,
  VOLUME = "40", NUMBER = "", PAGES = "5026", YEAR = "1989" }

@ARTICLE{HJM:She89,
  AUTHOR = "B. Sheehy and S-Q. Shang and R. Watts and S. Hatamian and H. Metcalf",
  TITLE = "Diode Laser Deceleration and Collimation of a Rubidium Beam",
  JOURNAL = JOUOSAB,
  VOLUME = "6", NUMBER = "", PAGES = "2165", YEAR = "1989" }

@ARTICLE{HJM:Met89b,
  AUTHOR = "Harold Metcalf",
  TITLE = "Magneto Optical Trapping and its Application to Helium Metastables",
  JOURNAL = JOUOSAB,
  VOLUME = "6", NUMBER = "", PAGES = "2206", YEAR = "1989" }

@ARTICLE{HJM:Ber89,
  AUTHOR = "T. H. Bergeman and Patrick McNicholl and Jan Kycia and H. Metcalf and N.
  L. Balazs",
  TITLE = "Quantized Motion of Atoms in a Quadrupole Magnetostatic Trap",
  JOURNAL = JOUOSAB,
  VOLUME = "6", NUMBER = "", PAGES = "2249", YEAR = "1989" }

@INPROCEEDINGS{HJM:Sha89b,

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AUTHOR = "S -Q. Shang and H. Metcalf",
TITLE = "Narrow Band, High Power Light From Diode Lasers",
BOOKTITLE = "Proceedings of International Conference on Lasers ",
EDITOR = "",
PUBLISHER = "",
PAGES = "", YEAR = "1989" }

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@ARTICLE{HJM:She90,
  AUTHOR = "B. Sheehy and S-Q. Shang and P. van der Straten and S. Hatamian and H. Metcalf",
  TITLE = "Magnetic Field Induced Laser Cooling Below the Doppler Limit",
  JOURNAL = phyrl,
  VOLUME = "64", NUMBER = "", PAGES = "858", YEAR = "1990" }

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@ARTICLE{HJM:Arn90,
  AUTHOR = "K. Arnett and S. J. Smith and R. E. Ryan and T. Bergeman and H. Metcalf and M. W. Hamilton and J. R. Brandenberger",
  TITLE = "Hanle Effect in Spectrally Broadened Light",
  JOURNAL = phyra,
  VOLUME = "41", NUMBER = "", PAGES = "2580", YEAR = "1990" }

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@ARTICLE{HJM:She90a,
  AUTHOR = "B. Sheehy and S-Q. Shang and P. van der Straten and H. Metcalf",
  TITLE = "Collimation of a Rubidium Beam Below the Doppler Limit",
  JOURNAL = Chep,
  VOLUME = "145", NUMBER = "", PAGES = "317", YEAR = "1990" }

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@ARTICLE{HJM:Sha90,
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  TITLE = "Velocity-Selective Magnetic-Resonance Laser Cooling",
  JOURNAL = phyrl,
  VOLUME = "65", NUMBER = "", PAGES = "317", YEAR = "1990" }

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@INPROCEEDINGS{HJM:Sha91,
  AUTHOR = "S. -Q. Shang and B. Sheehy and P. van der Straten and H. Metcalf",
  TITLE = "Sub-Doppler Laser Cooling in a Magnetic Field",
  BOOKTITLE = "Proceedings of Conference on Light Induced Kinetic Effects",
  EDITOR = "Arimondo and L. Moi",
  PUBLISHER = "",
  PAGES = "", YEAR = "1991" }

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@INPROCEEDINGS{HJM:Sha91a,
  AUTHOR = "S. -Q. Shang and B. Sheehy and P. van der Straten and H. Metcalf",
  TITLE = "Sub-Doppler Laser Cooling in a Magnetic Field",
  BOOKTITLE = "Atomic Physics XII",
  EDITOR = "R. Lewis and J. Zorn",
  PUBLISHER = "World Scientific, Singapore",
  PAGES = "", YEAR = "1991" }

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@ARTICLE{HJM:Chu91,
  AUTHOR = "T. Chuang and H. Metcalf",
  TITLE = "Tunable Diode-Laser-Pumped Solid State LNA Laser For Helium Spectroscopic Experiments",
  JOURNAL = appo,
  VOLUME = "30", NUMBER = "", PAGES = "2495", YEAR = "1991" }

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@ARTICLE{HJM:Sha91b,
  AUTHOR = "S-Q. Shang and B. Sheehy and H. Metcalf and P. van der Straten and G. Nienhuis",
  TITLE = "Velocity Selective Resonance and Sub-Doppler Laser Cooling",
  JOURNAL = phyrl,
  VOLUME = "67", NUMBER = "", PAGES = "1094", YEAR = "1991" }

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@INPROCEEDINGS{HJM:Met91,

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AUTHOR = "Harold Metcalf",
 TITLE = "Atomic Cooling and Trapping",
 BOOKTITLE = "Encyclopedia of Applied Physics",
 EDITOR = "",
 PUBLISHER = "VCH Publishers, Inc.",
 VOLUME = "2", PAGES = "225", YEAR = "1991" }

@ARTICLE{HJM:Hoo91,
 AUTHOR = "M. D. Hoogerland and H. C. W. Beijerinck and K. A. H. van Leeuwen and P. van der Straten and H. Metcalf",
 TITLE = "Magnetically Induced Laser Cooling for Ne*: Approaching the Recoil Limit",
 JOURNAL = eurl,
 VOLUME = "19", NUMBER = "", PAGES = "669", YEAR = "1992" }

@ARTICLE{HJM:Rey92,
 AUTHOR = "Harold Metcalf and Peter Reynolds",
 TITLE = "Laser Cooling Atoms To Ultra-Low Temperatures In A Magnetic Field",
 JOURNAL = "Naval Research Reviews, Office of Naval Research Two, Vol.",
 VOLUME = "XLIV", NUMBER = "", PAGES = "", YEAR = "1992" }

@INPROCEEDINGS{HJM:Gup91,
 AUTHOR = "R. Gupta and S. Padua and T. Bergeman and H. Metcalf",
 TITLE = "Search for Motional Quantization of Laser-Cooled Atoms",
 BOOKTITLE = "Proceedings of the International School of Physics Enrico Fermi, Varenna, Italy",
 EDITOR = "E. Arimondo and W. D. Phillips and F. Strumia",
 PUBLISHER = "North-Holland Elsevier Science Publishers B.V.",
 VOLUME = "", PAGES = "345", YEAR = "1992" }

@ARTICLE{HJM:Xie93,
 AUTHOR = "C. Xie and R. Gupta and H. Metcalf",
 TITLE = "Beam Profile Flattener for Gaussian Beams",
 JOURNAL = optl,
 VOLUME = "18", NUMBER = "", PAGES = "173", YEAR = "1993" }

@ARTICLE{HJM:van93,
 AUTHOR = "P. van der Straten and S-Q. Shang and B. Sheehy and H. Metcalf and G. Nienhuis",
 TITLE = "Laser Cooling at Low Intensity in a Strong Magnetic Field",
 JOURNAL = phyra,
 VOLUME = "47", NUMBER = "", PAGES = "4160", YEAR = "1993" }

@ARTICLE{HJM:Xie93a,
 AUTHOR = "S. Padua and C. Xie and R. Gupta and H. Batelaan and T. Bergeman and H. Metcalf",
 TITLE = "Transient Laser Cooling",
 JOURNAL = phyrl,
 VOLUME = "70", NUMBER = "", PAGES = "3217", YEAR = "1993" }

@ARTICLE{HJM:Rya93,
 AUTHOR = "R. Ryan and L. Westling and H. Metcalf",
 TITLE = "Two Photon Spectroscopy in Rubidium with a Diode Laser",
 JOURNAL = JOUOSAB,
 VOLUME = "10", NUMBER = "", PAGES = "1643", YEAR = "1993" }

@ARTICLE{HJM:Gup93,
 AUTHOR = "R. Gupta and C. Xie and S. Padua and H. Batelaan and H. Metcalf",
 TITLE = "Bichromatic Laser Cooling in a Three Level System",
 JOURNAL = phyrl,
 VOLUME = "71", NUMBER = "", PAGES = "3087", YEAR = "1993" }

@ARTICLE{HJM:Gup94,
 AUTHOR = "R. Gupta and S. Padua and C. Xie and H. Batelaan and H. Metcalf",
 TITLE = "Simplest Atomic System for Sub-Doppler Laser Cooling",
 JOURNAL = JOUOSAB,

VOLUME = "11", NUMBER = "", PAGES = "537", YEAR = "1994" }

@ARTICLE{HJM:Hoo94,
 AUTHOR = "M. Hoogerland and H. de Bie and H. Beijerinck and K. van Leeuwen and P. van der Straten and E. Vredenburg and H. Metcalf",
 TITLE = "Force and Diffusion Measurements in Sub-Doppler Laser Cooling",
 JOURNAL = phyrl,
 VOLUME = "72", NUMBER = "", PAGES = "3332", YEAR = "1994" }

@ARTICLE{HJM:Doe94,
 AUTHOR = "M. Doery and M. Widmer and J. Bellanca and E. Vredenburg and T. Bergeman and H. Metcalf",
 TITLE = "Energy Bands and Bloch States in 1-D Laser Cooling and their effects on the velocity distribution",
 JOURNAL = phyrl,
 VOLUME = "72", NUMBER = "", PAGES = "2546", YEAR = "1994" }

@ARTICLE{HJM:Bat94,
 AUTHOR = "H. Batelaan and S. Padua and D-H. Yang and C. Xie and R. Gupta and H. Metcalf",
 TITLE = "Slowing of Rb Atoms with Isotropic Light",
 JOURNAL = phyra,
 VOLUME = "49", NUMBER = "", PAGES = "2780", YEAR = "1994" }

@ARTICLE{HJM:van94,
 AUTHOR = "H. Metcalf and P. van der Straten",
 TITLE = "Laser Cooling and Trapping of Neutral Atoms - A major review article covering the entire field",
 JOURNAL = "Physics Reports",
 VOLUME = "", NUMBER = "", PAGES = "", YEAR = "1994" }

@ARTICLE{HJM:Mea94,
 AUTHOR = "D. Meacher and D. Boiron and H. Metcalf and C. Salomon and G. Grynberg",
 TITLE = "Method for Velocimetry of Cold Atoms",
 JOURNAL = phyra,
 VOLUME = "50", NUMBER = "", PAGES = "R1992", YEAR = "1994" }

@ARTICLE{HJM:Ste95,
 AUTHOR = "C-H. Iu and G. Stevens and H. Metcalf",
 TITLE = "Instrumentation for Multistep Excitation of Lithium Atoms to Rydberg States",
 JOURNAL = appo,
 VOLUME = "34", NUMBER = "", PAGES = "2640", YEAR = "1995" }

@ARTICLE{HJM:Rya95,
 AUTHOR = "R. Ryan and L. Westling and R. Blumel and H. Metcalf",
 TITLE = "Two-Photon Spectroscopy as a Technique for Characterizing Diode Laser Noise",
 JOURNAL = phyra,
 VOLUME = "52", NUMBER = "", PAGES = "3157", YEAR = "1995" }

@ARTICLE{HJM:Doe95,
 AUTHOR = "M. Doery and R. Gupta and T. Bergeman and H. Metcalf and E. Vredenburg",
 TITLE = "Bichromatic Velocity-Selective Coherent Population Trapping",
 JOURNAL = phyra,
 VOLUME = "51", NUMBER = "", PAGES = "2334", YEAR = "1995" }

@ARTICLE{HJM:Ste95a,
 AUTHOR = "G. Stevens and C-H. Iu and S. Williams and T. Bergeman and H. Metcalf",
 TITLE = "Hyperfine Splitting of the 3^2S State of Li Measured Using Stark Spectroscopy of Rydberg States",
 JOURNAL = phyra,
 VOLUME = "51", NUMBER = "", PAGES = "2866", YEAR = "1995" }

@ARTICLE{HJM:Ste95b,

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AUTHOR = "G. Stevens and C-H. Iu and T. Bergeman and H. Metcalf and I. Seipp and K. Taylor and D. Delande",
TITLE = "Absolute Calibration of Electric Fields Using Stark Spectroscopy",
JOURNAL = phyr1,
VOLUME = "75", NUMBER = "", PAGES = "3402", YEAR = "1995" }

@ARTICLE{HJM:Doe95a,
AUTHOR = "M. Doery and M. Widmer and J. Bellanca and W. Buell and T. Bergeman and H. Metcalf and E. Vredenburg",
TITLE = "Population Accumulation in Dark States",
JOURNAL = phyra,
VOLUME = "52", NUMBER = "", PAGES = "2295", YEAR = "1995" }

@ARTICLE{HJM:Wid96,
AUTHOR = "M. Widmer and M. Doery and J. Bellanca and W. Buell and T. Bergeman and H. Metcalf",
TITLE = "High Velocity Dark States in Velocity Selective Coherent Population Trapping",
JOURNAL = phyra,
VOLUME = "53", NUMBER = "", PAGES = "946", YEAR = "1996" }

@ARTICLE{HJM:Ste96,
AUTHOR = "G. Stevens and C-H. Iu and T. Bergeman and Harold Metcalf and I. Seipp and K. Taylor and D. Delande",
TITLE = "Precision Measurements of Lithium Atoms in an Electric Field Compared with R-Matrix and Other Stark Theories",
JOURNAL = phyra,
VOLUME = "53", NUMBER = "", PAGES = "1349", YEAR = "1996" }

@ARTICLE{HJM:Wid96a,
AUTHOR = "M. Widmer and M-J. Bellanca and W. Buell and Harold Metcalf and M. Doery and E. Vredenburg",
TITLE = "Measurement of Force-Assisted Population Accumulation in Dark States",
JOURNAL = opt1,
VOLUME = "21", NUMBER = "", PAGES = "606", YEAR = "1996" }

@ARTICLE{HJM:Hoo96,
AUTHOR = "M. Hoogerland and H. de Bie and H. C. W. Beijerinck and E. Vredenburg and K. A. H. van Leeuwen and P. van der Straten and H. Metcalf",
TITLE = "Force, Diffusion, and Channeling in Sub-Doppler Laser Cooling",
JOURNAL = phyra,
VOLUME = "54", NUMBER = "", PAGES = "3206", YEAR = "1996" }

@ARTICLE{HJM:Met97,
AUTHOR = "Harold Metcalf",
TITLE = "Laser Cooling as a Form of Optical Pumping",
JOURNAL = phys,
VOLUME = "T70", NUMBER = "", PAGES = "57", YEAR = "1997" }

@ARTICLE{HJM:Mo197,
AUTHOR = "P. Molenaar and P. van der Straten and H. Heideman and H. Metcalf",
TITLE = "Diagnostic Technique for Zeeman-Compensated Atomic Beam Slowing: Technique and Results",
JOURNAL = phyra,
VOLUME = "55", NUMBER = "", PAGES = "605", YEAR = "1997" }

@ARTICLE{HJM:Met97a,
AUTHOR = "Harold Metcalf",
TITLE = "Dark States and deBroglie Wave Optics",
JOURNAL = actppa,
VOLUME = "93", NUMBER = "", PAGES = "147", YEAR = "1997" }

@ARTICLE{HJM:Wil96,
AUTHOR = "M. Williams and M-J. Bellanca and L. Liu and C. Xie and W. Buell and T. Bergeman and H. Metcalf",
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TITLE = "Atom Cooling in One Dimension with High Intensity Laser Light",
 JOURNAL = phyra,
 VOLUME = "57", NUMBER = "", PAGES = "401", YEAR = "1998" }

@ARTICLE{HJM:Met98,
 AUTHOR = "Harold Metcalf",
 TITLE = "That Flashing Sound: Sonoluminescence",
 JOURNAL = sci,
 VOLUME = "279", NUMBER = "", PAGES = "1322", YEAR = "1998" }

@BOOK{HJM:Met99,
 AUTHOR = "Harold Metcalf and Peter van der Straten",
 TITLE = "Laser Cooling and Trapping",
 PUBLISHER = "Springer Verlag",
 ADDRESS = "NY",
 YEAR = "1999",
 COMMENT = " A graduate level textbook covering cooling and trapping,
 theory and applications" }

@ARTICLE{HJM:Wil99,
 AUTHOR = "M. Williams and F. Chi and M. Cashen and H. Metcalf",
 TITLE = "Measurement of the Bichromatic Optical Force on Rb Atoms",
 JOURNAL = phyra,
 VOLUME = "60", NUMBER = "", PAGES = "1763", YEAR = "1999" }

@ARTICLE{HJM:Wil00,
 AUTHOR = "M. Williams and F. Chi and M. Cashen and H. Metcalf",
 TITLE = "Bichromatic Force measurements using Atomic Beam Deflections",
 JOURNAL = phyra,
 VOLUME = "61", NUMBER = "", PAGES = "023408", YEAR = "2000" }

@ARTICLE{HJM:Cas00,
 AUTHOR = "M. Cashen and V. Bretin and H. Metcalf",
 TITLE = "Optical Pumping in $^4\text{He}^*$ with Frequency-Shifted
 Feedback Amplification of Light",
 JOURNAL = JOUOSAB,
 VOLUME = "17", NUMBER = "", PAGES = "530", YEAR = "2000" }

@ARTICLE{HJM:Hac00,
 AUTHOR = "J. Hack and L. Liu and M. Olshanii and H. Metcalf",
 TITLE = "Velocity-Selective Coherent Population Trapping of Two-Level Atoms",
 JOURNAL = phyra,
 VOLUME = "62", NUMBER = "", PAGES = "013405", YEAR = "2000" }

@ARTICLE{HJM:Lei00,
 AUTHOR = "H. Leinen and D. Glassner and H. Metcalf and R. Wynands and D. Haubrich
 and D. Meschede",
 TITLE = "GaN Blue Diode Lasers: a Spectroscopist's View",
 JOURNAL = apppb,
 VOLUME = "70", NUMBER = "", PAGES = "567", YEAR = "2000" }

@ARTICLE{HJM:Ber01,
 AUTHOR = "R. Bertram and H. Merrimeche and M. Mutzel and H. Metcalf and D. Haubrich
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 Meschede and P. Rosenbusch and E. Hinds",
 TITLE = "A Magnetic Whispering-Gallery Mirror for Atoms",
 JOURNAL = phyra,
 VOLUME = "63", NUMBER = "", PAGES = "053405", YEAR = "2001" }

@INCOLLECTION{HJM:Met01,
 AUTHOR = "Peter van der Straten and Harold Metcalf",
 TITLE = "Laser Cooling and Trapping of Neutral Atoms",
 BOOKTITLE = "Handbook of Optics IV",
 EDITOR = "Michael Bass et al.",
 PUBLISHER = "McGraw Hill",

ADDRESS = "NY",
 YEAR = "2001",
 PAGES = "28.1",
 COMMENT = "Handbook of Optics, vol. IV, Chapter 28, 41 pages" }

@ARTICLE{HJM:Cas01,
 AUTHOR = "M. Cashen and H. Metcalf",
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 JOURNAL = phyra,
 VOLUME = "63", NUMBER = "", PAGES = "025406", YEAR = "2001" }

@ARTICLE{HJM:Chi01,
 AUTHOR = "Felix Chi and Matt Partlow and H. Metcalf",
 TITLE = "Precision Velocimetry in a Thermal Atomic Beam by Stimulated Optical Compton Scattering",
 JOURNAL = phyra,
 VOLUME = "64", NUMBER = "", PAGES = "043407", YEAR = "2001" }

@ARTICLE{HJM:Cas01a,
 AUTHOR = "M. Cashen and O. Rivoire and V. Romanenko and L. Yatsenko and H. Metcalf",
 TITLE = "Strong Optical Forces in Frequency-Modulated Light",
 JOURNAL = phyra,
 VOLUME = "64", NUMBER = "", PAGES = "063411", YEAR = "2001" }

@ARTICLE{HJM:Cas02,
 AUTHOR = "M. Cashen and O. Rivoire and L. Yatsenko and H. Metcalf",
 TITLE = "Coherent Exchange of Momentum Between Atoms and Light",
 JOURNAL = "Opt. B, Quant. Semiclassical Opt.",
 VOLUME = "4", NUMBER = "", PAGES = "75", YEAR = "2002" }

@ARTICLE{HJM:Liu02,
 AUTHOR = "L. Liu and M. J. Bellanca and H. Metcalf",
 TITLE = "Evolution of Coherent Dark States",
 JOURNAL = phyra,
 VOLUME = "65", NUMBER = "", PAGES = "043401", YEAR = "2002" }

@ARTICLE{HJM:Mes03,
 AUTHOR = "D. Meschehede and H. Metcalf",
 TITLE = "Atomic Nanofabrication: Atomic Deposition and Lithography by Laser and Magnetic Forces",
 JOURNAL = joupd,
 VOLUME = "36", NUMBER = "", PAGES = "R17", YEAR = "2003" }

@ARTICLE{HJM:van03,
 AUTHOR = "H. Metcalf and P. van der Straten",
 TITLE = "Laser Cooling and Trapping of Atoms",
 JOURNAL = JOUOSAB,
 VOLUME = "20", NUMBER = "", PAGES = "887", YEAR = "2003" }

@ARTICLE{HJM:Cas03,
 AUTHOR = "M. Cashen and H. Metcalf",
 TITLE = "Optical Forces on Atoms in Non-Monochromatic Light",
 JOURNAL = JOUOSAB,
 VOLUME = "20", NUMBER = "", PAGES = "915", YEAR = "2003" }

@INPROCEEDINGS{HJM:van03a,
 AUTHOR = "P. van der Straten and H. Metcalf",
 TITLE = "The Quest for BEC",
 BOOKTITLE = "Proceedings of the Heidelberg School",
 EDITOR = "",
 PUBLISHER = "",
 VOLUME = "", PAGES = "", YEAR = "2003" }

@ARTICLE{HJM:Yatl04,
 AUTHOR = "L. Yatsenko and H. Metcalf",

TITLE = "Dressed State View of the Bichromatic Force",
 JOURNAL = phyra,
 VOLUME = "70", NUMBER = "", PAGES = "063402", YEAR = "2004" }

@INPROCEEDINGS{HJM:van04,
 AUTHOR = "H. Metcalf and P. van der Straten",
 TITLE = "Laser Cooling and Trapping of Neutral Atoms",
 BOOKTITLE = "The Optics Encyclopedia",
 EDITOR = "",
 PUBLISHER = "Wiley-VCH, Weinheim, Germany",
 VOLUME = "2", PAGES = "975", YEAR = "2004" }

@ARTICLE{HJM:Par04,
 AUTHOR = "M. Partlow and X. Miao and J. Bochmann and M. Cashen and H. Metcalf",
 TITLE = "Bichromatic Slowing and Collimation to Make an Intense Helium Beam",
 JOURNAL = phyrl,
 VOLUME = "93", NUMBER = "", PAGES = "213004", YEAR = "2004" }

@ARTICLE{HJM:Lu05,
 AUTHOR = "T. Lu and X. Miao and H. Metcalf",
 TITLE = "Bloch Theorem on the Bloch Sphere",
 JOURNAL = phyra,
 VOLUME = "71", NUMBER = "", PAGES = "061405", YEAR = "2005" }

@ARTICLE{HJM:Met06,
 AUTHOR = "H. Metcalf",
 TITLE = "Undergrads Show Their Stuff at FiO Research Symposium",
 JOURNAL = "Optics and Photonics News",
 VOLUME = "18", NUMBER = "", PAGES = "", YEAR = "2006" }

@ARTICLE{HJM:Mia07,
 AUTHOR = "X. Miao and E. Wertz and M. G. Cohen and H. Metcalf",
 TITLE = "Strong Optical Forces from Adiabatic Rapid Passage",
 JOURNAL = phyra,
 VOLUME = "75", NUMBER = "", PAGES = "011402", YEAR = "2007" }

@ARTICLE{HJM:Lu07,
 AUTHOR = "T. Lu and X. Miao and H. Metcalf",
 TITLE = "Non-adiabatic Transitions in Finite-Time Adiabatic Rapid passage",
 JOURNAL = phyra,
 VOLUME = "75", NUMBER = "", PAGES = "063422", YEAR = "2007" }

@ARTICLE{HJM:Ver07,
 AUTHOR = "A. Vernaleken and M. Cohen and H. Metcalf",
 TITLE = "Interferometric Measurement of Acoustic Velocity in PbMoO₄ and TeO₂",
 JOURNAL = appo,
 VOLUME = "46", NUMBER = "", PAGES = "7117", YEAR = "2007" }

@ARTICLE{HJM:klo08,
 author = {B. Klöster and C. Weber and D. Haubrich and D. Meschede and H. Metcalf},
 collaboration = {},
 title = {Laser Cooling of an Indium Atomic Beam Enabled by Magnetic Fields},
 publisher = {APS},
 year = {2008},
 journal = phyra,
 volume = {77},
 number = {3},
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 doi = {10.1103/PhysRevA.77.033402}
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@article{HJM:Met08,
author = {Harold Metcalf},
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title = {Entropy Exchange in Laser Cooling},
publisher = {APS},
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journal = phyra,
volume = {77},
number = {6},
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doi = {10.1103/PhysRevA.77.061401}
}

@ARTICLE{HJM:Yu08,
AUTHOR = "MA Hong-Yu and Hua-Dong Cheng and Yu-Zhu Wang and Liang Liu and Harold Metcalf",
TITLE = "Ultra-Slow Atomic Beam Generation by Velocity Selective Resonance",
JOURNAL = "Chinese Physics Letters",
VOLUME = "25", NUMBER = "", PAGES = "1646-1648", YEAR = "2008" }

@ARTICLE{HJM:All10,
AUTHOR = "Claire S. Allred and Jason Reeves and Christopher Corder and Harold Metcalf",
TITLE = "Atom Lithography with Metastable Helium",
JOURNAL = jouap,
VOLUME = "107", NUMBER = "", PAGES = "033116", YEAR = "2010" }

@ARTICLE{HJM:Sta11,
AUTHOR = "Dan Stack and John Elgin and Petr Anisimov and Harold Metcalf",
TITLE = "Numerical Studies of Optical Forces from Adiabatic Rapid Passage",
JOURNAL = phyra,
VOLUME = "84", NUMBER = "", PAGES = "013420", YEAR = "2011" }

@ARTICLE{HJM:Lu11,
AUTHOR = "Xiaoxu Lu and Yuan Sun and Harold Metcalf",
TITLE = "Rydberg Atom Spectroscopy Enabled by Blackbody Radiation Ionization",
JOURNAL = phyra,
VOLUME = "84", NUMBER = "", PAGES = "033402", YEAR = "2011" }

@ARTICLE{HJM:Sun14,
author = "Sun, Yuan and Metcalf, Harold",
title = "Nonadiabaticity in Stimulated Raman Adiabatic Passage",
journal = "Phys. Rev. A",
volume = "90",
pages = {033408},
year = "2014"
}
% issue = {3},
% numpages = {8},
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@ARTICLE{HJM:Cor15a,
title = {Laser Cooling without Spontaneous Emission},
author = {Corder, Christopher and Arnold, Brian and Metcalf, Harold},
journal = {Phys. Rev. Lett.},
volume = {114},
pages = {043002},
numpages = {5},
year = {2015}
}

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%month = {Jan},
% issue = {4},
% publisher = {American Physical Society},
% doi = {10.1103/PhysRevLett.114.043002},
% url = {http://link.aps.org/doi/10.1103/PhysRevLett.114.043002}
%}
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@ARTICLE{HJM:Cor15b,
author = {Christopher Corder and Brian Arnold and Xiang Hua and Harold Metcalf},
title = {Laser Cooling Without Spontaneous Emission Using the Bichromatic Force},
volume = {32},
journal = {J. Opt. Soc. Am. B},
pages = {B75--B83},
year = {2015}}
%keywords = {Laser cooling; Atom optics ; Laser cooling},
%number = {5},
%publisher = {OSA},
%month = {May},
%url = {http://josab.osa.org/abstract.cfm?URI=josab-32-5-B75},
%doi = {10.1364/JOSAB.32.000B75}
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@BOOK{HJM:PvS16,
AUTHOR = "Peter van der Straten and Harold Metcalf",
TITLE = "Atoms and Molecules Interacting with Light",
PUBLISHER = "Cambridge University Press",
ADDRESS = "Cambridge CB2 8BS, UK",
YEAR = "2016",
COMMENT = "A comprehensive textbook for the laser era" }
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@article{HJM:Hua16,
title = {Simulation of Laser Cooling by the Bichromatic Force},
author = {Hua, Xiang and Corder, Christopher and Metcalf, Harold},
journal = {Phys. Rev. A},
pages = {063410},
volume = {93},
year = {2016}
}
% month = {Jun},
% publisher = {American Physical Society}
%issue = {6},
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% doi = {10.1103/PhysRevA.93.063410},
%url = {http://link.aps.org/doi/10.1103/PhysRevA.93.063410}
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@article{HJM:Met17,
title = {Strong Optical Forces on Atoms in Multifrequency Light},
author = {Harold Metcalf},
journal = {Rev. Mod. Phys},
pages = {041001},
volume = {89},
year = {2017}
}
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@article{HJM:Fan23,
title = {Measurements of Velocity-Selective Resonances from Adiabatic Rapid Passage},
author = {Fang, Yifan and Buonocore, Edoardo and Wahl, Michael and Metcalf, Harold},
journal = {Phys. Rev. A},
volume = {107},
issue = {5},
pages = {L051101},
year = {2023},
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%numpages = {4},
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%publisher = {American Physical Society},  
% doi = {10.1103/PhysRevA.107.L051101},  
% url = {https://link.aps.org/doi/10.1103/PhysRevA.107.L051101}
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