

Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

Limits on thermally-distributed halo dark-matter axions from ADMX GIANPAOLO CAROSI, Lawrence Livermore National Laboratory, STEVEN ASZTALOS, Lawrence Livermore National Laboratory, 7000 East Avenue, Livermore, CA 94550, USA, RICHARD BRADLEY, National Radio Astronomical Observatory, MICHAEL HOTZ, University of Washington, JUNGSEEK HWANG, University of Florida, DARIN KINION, Lawrence Livermore National Laboratory, LESLIE ROSENBERG, GRAY RYBKA, University of Washington, PIERRE SIKIVIE, DAVID TANNER, University of Florida, KARL VAN BIBBER, Lawrence Livermore National Laboratory — The Axion Dark Matter eXperiment (ADMX) at LLNL searches for dark-matter axions through their Primakoff conversion to microwave photons, resonantly enhanced in a high-Q cavity permeated by a strong magnetic field. The most general assumption is that halo axions are thermalized with the local virial velocity of the Milky Way, about 270 km/sec, which implies a spectral line-broadening of one part in a million. ADMX has set limits on halo axions for realistic models over an octave of mass range in the few microelectronvolt range. The experiment is the most sensitive spectral receiver in the world, able to detect signals in the GHz range well below a yoctowatt. This talk will outline the experimental technique, data analysis and results for the medium-resolution search.

Gray Rybka
University of Washington

Date submitted: 27 Jun 2008

Electronic form version 1.4