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Status and prospects of the AMBER experiment for detecting ultrahigh energy cosmic ray air showers through molecular bremsstrahlung P.S. ALLISON, X. GAO, P.W. GORHAM, J. KENNEDY, L. MACCHIARULO, C. MIKI, L.L. RUCKMAN, G.S. VARNER, University of Hawaii-Manoa, J.J. BEATTY, J. DAVIS, E.W. GRASHORN, N. GRIFFITH, J. MAYER, C. MORRIS, Ohio State University — The Air-shower Molecular Bremsstrahlung Radiometer (AMBER) is a novel experiment intended to open a new detection mechanism for ultrahigh energy cosmic ray showers motivated by laboratory and accelerator experiments which show evidence of partially coherent emission in the microwave region from an electromagnetic cascade. This would allow the longitudinal measurement of an air shower in a similar manner to a nitrogen fluorescence detector, but with a much higher duty cycle and without uncertainty due to variable atmospheric attenuation. Prototype detectors are being developed by the Ohio State University and the University of Hawaii-Manoa for deployment at the Pierre Auger Observatory in Mendoza, Argentina to confirm and calibrate the emission by using the surface and fluorescence detectors to trigger directly on cosmic ray air showers.

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