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**Experiments on Alfvén waves in high beta plasmas**[1] WALTER GEKELMAN, PATRICK PRIBYL, CHRIS COOPER, STEPHEN VINCENA, Dept of Physics, UCLA — The propagation of Alfv'en waves in high beta plasmas is of great interest in solar wind studies as well as in astrophysical plasmas. Alfvén wave propagation in a high beta plasma is studied on the axis of a toroidal device at UCLA. The vacuum vessel is 30 meters in circumference, 2 meters wide and 3 meters tall. The plasma has a cross sectional area of 20 $cm^2$ and can be as long as 120 m which is hundreds of parallel Alfvén wavelengths. The waves are launched using two orthogonal 5-turn , 5.7 cm diameter loops. The AC currents (10 kHz $<$ f $<$ 250 kHz) to the loops are as high as 2 kA p-p, producing fields of 1 kG on the axis of the antenna. The antenna coils are independently driven such that waves with arbitrary polarization can be launched. Movable three axis magnetic pickup loops detect the wave and are used to construct field maps in the machine. Wave propagation results as a function of plasma beta and input wave energy will be presented.

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