HYDROGEN PRESSURE BROADENING OF AMMONIA INVERSION TRANSITIONS FROM 10 - 40 K

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We will present pressure broadening results for the (J, K) = (1, 1), (2, 2) and (3, 3) inversion transitions of NH_3 broadened by H_2 at temperatures of 10 - 40 K. These results were obtained using a quasi-equilibrium collisionally cooled cell. When compared to previous low temperature He pressure broadening cross sections of NH_3, the cross sections for low temperature H_2 broadening are significantly larger. We have also used existing NH_3 - H_2 potential surfaces to calculate theoretical cross sections for comparison with the experimental data.