

Rotational energy transfer in collisions between CO and Ar at temperatures from 293 to 30 K

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Experimental measurements and theoretical calculations are reported for rotational energy transfer in the Ar-CO system. Experiments were performed in cold uniform supersonic flows of Ar, using an infrared ? vacuum ultraviolet double resonance technique to measure absolute state-to-state rate constants and total relaxation cross sections for rotational energy transfer within the ($v = 2$) vibrational state of CO in collision with Ar at temperatures from 30.5 to 293 K. Close-coupling calculations were also performed using a recent potential energy surface (Sumiyoshi and Endo, 2015). Very good agreement is obtained between measured and calculated values. © 2017 Elsevier B.V.