

BASECOL2012: A Collisional Database Repository and Web Service within VAMDC

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The BASECOL2012 [1] database (<http://basecol.obspm.fr>) is a repository of collisional data and a web service within the Virtual Atomic and Molecular Data Centre [2, 3] (VAMDC, <http://www.vamdc.eu>). Basecol contains rate coefficients for the collisional excitation of rotational, ro-vibrational, vibrational, fine and hyperfine levels of molecules by atoms, molecules and electrons, as well as fine structure excitation of some atoms, which are relevant to interstellar and circumstellar astrophysical applications. Additional features are provided such as information on and critical evaluation of the rate coefficient calculations, fitted functions for many available rate coefficients and a section for community information.

In addition BASECOL2012 provides spectroscopic data queried from the Cologne Database for Molecular Spectroscopy database (CDMS <http://www.astro.uni-koeln.de/cdms>) [4], the Jet Propulsion Laboratory catalogue (JPL, <http://spec.jpl.nasa.gov/>) [5], the High-resolution TRANsmission molecular absorption database (HITRAN, <http://www.cfa.harvard.edu/hitran/>) [6] using the VAMDC technology. These spectroscopic data are conveniently matched to the in-house collisional excitation rate coefficients using the SPECTCOL software package [7,8] (<http://vamdc.eu/software>) and the combined sets of data can be downloaded from the BASECOL2012 website. Being a partner of the VAMDC, BASECOL2012 is accessible from the general VAMDC portal (<http://portal.vamdc.eu>) and from user tools such as SPECTCOL.

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