Desorption energy rule of thumb for ices of astrophysical interest

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Introdución: Desorption energy is a relevant parameter when the study of the desorption kinetics of an ice under astrophysical conditions is addressed. Values reported so far are calculated using at least a desorption experiment and a further data analysis. The obtention of a simple rule that relates the desorption energy of a species to the temperature of its desorption peak is explored. In this work we present the results obtained from zeroth order desorption experiments, based on the use of a QCMB to monitor the loss of weigh during desorption of the accreted ice sample under high vacuum, of nine different molecules covering a wide range of desorption energies. During these experiments the ice desorption rate reaches a maximum at a certain temperature depending on the molecule. The formula obtained in this study facilitates the estimation of the desorption energy and is valid for all the investigated molecules. Based in our experimental results and simulations, the theoretical expression obtained, is valid to calculate desorption energy for zeroth and first order desorption experiments under high or ultra high vacuum conditions using different ice thickness films.