

Rb-Ca⁺: scattering calculations for radiative processes

Radiative charge transfer

$$\sigma^{RCT}(\epsilon_i) = p \frac{8\pi^2}{3c^3} \frac{\omega_{i,f}^3}{k_i^2} \sum_{J=0}^{\infty} \int_0^{\epsilon_f^{max}} (J |\langle J-1, \epsilon_f | D(R) | \epsilon_i, J \rangle|^2 + (J+1) |\langle J+1, \epsilon_f | D(R) | \epsilon_i, J \rangle|^2) d\epsilon_f$$

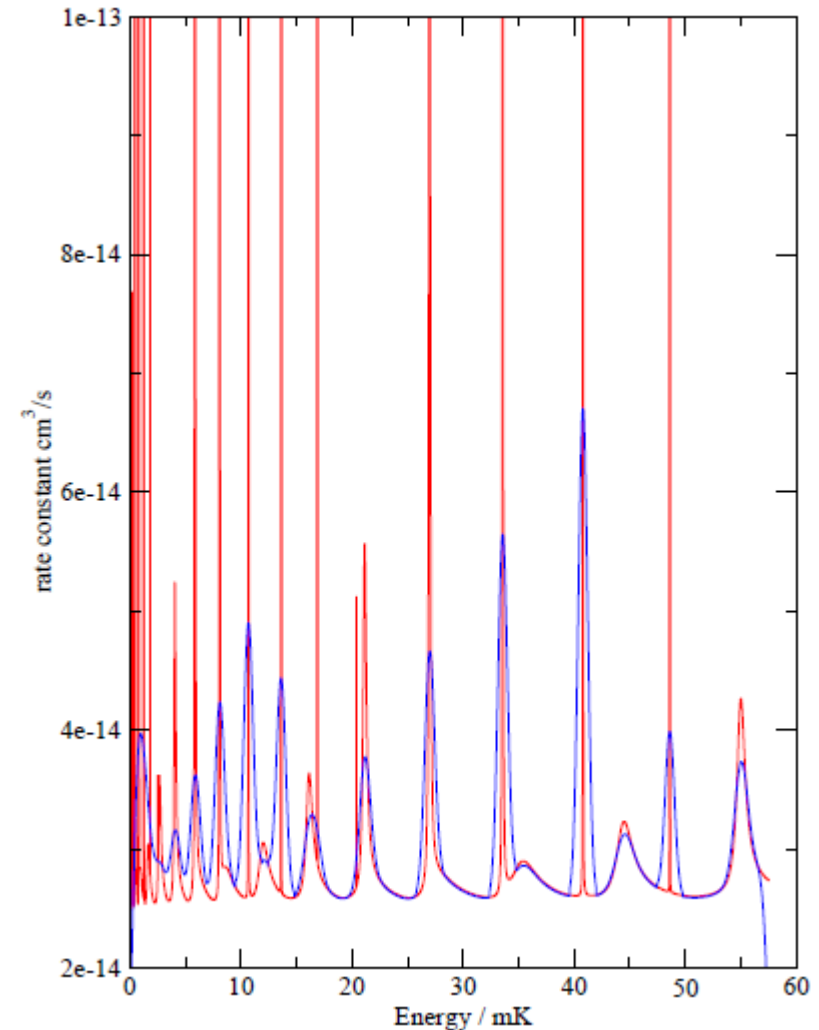
Radiative association

$$\sigma^{RA}(\epsilon_i) = p \frac{8\pi^2}{3c^3} \frac{1}{k_i^2} \sum_{J=0}^{\infty} \sum_{v=0}^{v_{max}} \left(\omega_{i,J,v(J-1)}^3 J |\langle J-1, v | D(R) | \epsilon_i, J \rangle|^2 + \omega_{i,J,v(J+1)}^3 (J+1) |\langle J+1, v | D(R) | \epsilon_i, J \rangle|^2 \right)$$

Shape resonances

Energy step: 10⁻⁶ cm⁻¹

Convolution with a gaussian of width 1mK



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