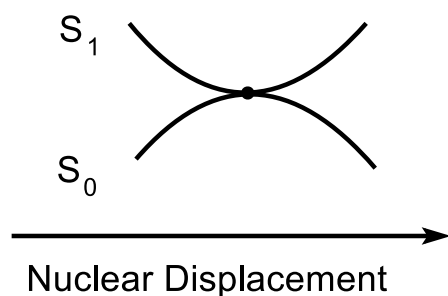


Renner–Teller effect

Molecular distortion in linear molecular species with degenerate electronic states (e.g., belonging to the $C_{\infty v}$ group). The Renner–Teller effect is a particular case of the Jahn–Teller effect. From the point of view of the potential energy surfaces the Renner–Teller effect generates a surface touching (see scheme below).

Notes:

1. The Renner–Teller effect arises from splittings in the vibrational levels of molecular entities due to even terms in the vibronic perturbation expansion. This is generally a minor effect for non-linear molecular entities compared to the Jahn–Teller effect, which is due to the odd terms.
2. For linear molecular entities it is the only possible vibronic effect characteristic of degenerate electronic states.



Source:

PAC, 2007, 79, 293 (*Glossary of terms used in photochemistry, 3rd edition (IUPAC Recommendations 2006)*) on page 414