

# Electrons attached by long-range forces: Quadrupole bound anions

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This talk addresses the notion of quadrupole bound states. First, the difference between dipole- or quadrupole-bound states, on the one hand, and conventional anions, on the other hand, is discussed. Possible criteria to distinguish the two and borderline cases are presented. Then, as a particular example electron binding to succinonitrile (NC-CH<sub>2</sub>-CH<sub>2</sub>-CN) is considered. For succinonitrile two anionic states have been observed, and these were interpreted as dipole- and quadrupole-bound states associated with two different conformers. Both states are analysed in terms of contributions to their binding energy and in terms of the excess electron's Dyson orbitals. Finally, candidates for molecules showing only quadrupole-bound states are discussed.