Molecules Behaving Badly

There have been no systematic experimental probes of the chemically interesting, far-from-equilibrium regions of potential energy surfaces. At high excitation, all textbook energy level patterns, based on small amplitude displacements from equilibrium, are shattered. But assignments of spectra are necessarily based on patterns. There are new classes of patterns and new spectroscopic methods that sample isomerization and dissociation transition states. Perhaps *bad* will become the new *good*?