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ESR spectra for high-spin systems under arbitrary motion conditions

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A general theory of Electron Spin Resonance (ESR) lineshape analysis is presented. The theory concerns high-spin systems, for which the dominating contribution to the electron spin dynamics is provided by zero-field splitting. The approach is based on a full solution of the stochastic Liouville - von Neumann equation, and, in consequence, it is valid for arbitrary motional conditions and interaction strengths.