

## Spin-Orbital Function Formalism and ASPIRRIN Code

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A spin-orbital functions formalism is described. The formalism was realized in the ASPIRRIN code that does beam polarization calculations at the first order. The code has been used for calculating equilibrium polarization and polarization time in electron rings with the complex geometry of applied magnetic fields as well for resonance strength calculations for proton accelerators. The formalism is also convenient way for spin matching condition analysis in an accelerator with a spin rotator insertion.