

Electron and proton spin polarization in storage rings – the differences

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Abstract

Although depolarization in proton and electron beams in storage rings and ring accelerators is rooted in the spin–orbit coupling embodied in the Thomas–BMT equation, the details of the depolarization mechanisms are very different. In both cases the spin distributions are most efficiently described in terms of the invariant spin field. The invariant spin field also provides the best framework for describing the differences. This viewpoint and the need for caution with terminologies will be illustrated with examples.

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