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Electrical Spin Generation and Transport in Spin-Orbit Coupled Systems

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We consider spin generation and transport in bands with built-in spin-orbit coupling. A number of fundamental issues will be discussed: (1) the existence of spin-dipole and torque-dipole of wave packets which model the carriers; (2) source terms in the continuity equation (spin generation and relaxation); (3) the composition of the spin current (Berry phase and more); (4) spin Hall conductivity and its reciprocal; (5) the spin current responsible for spin accumulation.

References:

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