Spin currents through strongly correlated quantum dot placed in oscillating magnetic field

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Using slave boson Kotliar-Ruckenstein approach and the equation of motion method we analyze conductance and spin currents of single Anderson impurity in Kondo regime in static parallel and oscillating transverse magnetic field. Performing a rotating frame transformation we eliminate the oscillating time dependence in the Hamiltonian. The Zeeman field induces splitting of Kondo resonance peak, but transverse field oscillating with a frequency of order of Zeeman splitting dynamically restores Kondo state around the electron-hole symmetry point. Oscillating field induces zero-bias transverse spin current, the value of which depends on the coupling strength with the leads, the field amplitude and frequency. The highest spin currents occur in the Coulomb blockade regions, for high frequencies they depend weakly on the gate voltage over a wide range. For finite bias, also parallel spin current component is generated and all spin current components exhibit non-monotonic bias dependencies.