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Spin Polarization Induced by Rashba Field and Electromagnetic Wave KATSUHISA TAGUCHI, GEN TATARA, Tokyo Metropolitan University —
We theoretically show that the spin polarization is induced by the electric field of the electromagnetic wave in the presence of the Rashba spin-orbit interaction in metals. The spin is derived from the correlation function between the spin and electron's density and between the spin and electron's current. The correlation function is calculated by using the thermal Green's function, which includes non-perturbative Rashba spin-orbit interactions. The result shows that the spin is generated by electric field and Rashba fields.

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