

# Nonlocal electronic spin detection and the spin hall effect

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Spintronics aims to replace charge with spin as the main computational element in devices. Much effort is being devoted to understand how the electron spin is transferred through interfaces and to identify fundamental processes that modify the spin polarization or that can be used for spin manipulation. Nonlocal lateral structures are a unique tool to study these phenomena because of the ease to fabricate them in multi-terminal configurations. This will be illustrated by some of our experimental results in thin-film devices, where the output voltage is exclusively determined by the spin degree of freedom and provides valuable information on spin-flip scattering mechanisms, spin-polarized tunneling, spin-orbit interaction and the spin Hall effect.