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Spin Dynamics in Bilayer Graphene and Mono- and Bilayer Transition Metal Dichalcogenides

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In this talk, I am going to present our many-body investigation on spin dynamics in bilayer graphene as well as mono- and bilayer transition metal dichalcogenides. The influence of the inter-valley scattering to the spin relaxation is addressed. The valley/spin depolarization due to the inter- and intravalley electron-hole Coulomb exchange interaction is revealed. A possible primary excitation, excimer, is proposed in bilayer WS_2 .