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Bright Interlayer Exciton Dynamics in MoSe$_2$-WSe$_2$ Heterostructures  
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XU, Univ of Washington — Monolayer transition metal dichalcogenide heterostructures have recently demonstrated type-II band alignment, prompting great interest in characterizing the properties of this new material system. In the monolayer MoSe$_2$-WSe$_2$ heterostructure, bright spatially indirect excitons with dramatically extended lifetimes have been demonstrated. Since the interlayer excitons are permanent electrical dipoles, they allow for electrical and optical control. Here, we report on the investigation of interlayer exciton emission energy, lifetime, and in-plane spatial diffusion, as a function of electric field and exciton density, in the MoSe$_2$-WSe$_2$ heterostructure.

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