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Ultrafast laser spectroscopy of exciton dynamics in CVD-grown monolayer MoS₂ EDBERT JARVIS SIE, YIHUA WANG, YI-HSIEN LEE, JING KONG, NUH GEDIK, MIT — Recently, much effort has been devoted to the spin-valley interplay in exfoliated monolayer MoS₂, yet the many-body interactions in this material are largely unexplored. In fact, monolayer MoS₂ offers a special platform in the study of many-body effects owing to its 2D nature with a large band gap and a giant exciton binding energy. Here, we use ultrafast laser spectroscopy to study the exciton dynamics of CVD-grown monolayer MoS₂. We observed a strongly non-linear fluence dependent behavior which indicates presence of many-body interactions in this material.

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