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Inducing Resonances with Floquet Engineering of Ultracold Scattering[1] CHRISTOPH DAUER, AXEL PELSTER, SEBASTIAN EGGERT, Physics Department and Research Center OPTIMAS, University of Kaiserslautern, Germany — Magnetic Feshbach resonances are a powerful tool in order to control the scattering length in ultracold gas experiments [1], but are limited to given atomic species or applied magnetic field strengths. Recent studies showed that periodic driving can also induce scattering resonances, but are limited to the simplest inter-particle potentials [2-4]. In this work we consider a more realistic inter-atomic interaction by including an open and a closed channel, as they occur in the description of magnetic Feshbach resonances [5]. We allow for a time-periodic modulation of the inter-channel coupling or the detuning of the channel thresholds and report about the emergence of driving induced scattering resonances. A detailed investigation how resonance frequency and width depend on both driving frequency and strength is performed. With this we obtain predictions for a time-periodic modulation of the magnetic field near a magnetic Feshbach resonance, which are of experimental interest. [1] C. Chin et al., Rev. Mod. Phys. 82, 1225 (2010) [2] D.H. Smith, Phys. Rev. Lett. 115, 193002 (2015) [3] A.G. Sykes et al., Phys. Rev. A 95, 062705 (2017) [4] S.A. Reyes et al., New J. Phys. 19, 043029 (2017) [5] R.A. Duine and H.T.C. Stoof, Phys. Rep. 396, 115 (2004)

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