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Feshbach-optimized photoassociation in LiRb MARKO GACESA, PHILIPPE PELLEGRINI, ROBIN CÔTÉ, University of Connecticut — We propose a realistic scheme for production of ultracold heteronuclear LiRb molecules in their lowest vibrational levels based on photoassociation in the vicinity of Feshbach resonances. To calculate the positions of Feshbach resonances we perform coupled-channel calculations using the best available molecular potentials, and the photoassociation rate is computed by multichannel mapped Fourier grid method. Li-Rb is an interesting mixture to study since it forms a polar molecule with a large dipole moment in its ground state. Polar molecules can be used in experiments related to e.g. quantum information and study of degenerate gases.

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