

Abstract Submitted  
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**Strong Photoassociation in Ultracold Fermions**<sup>1</sup> LI JING, ALAN JAMISON, TIMUR RVACHOV, SEPPER EBADI, Massachusetts Institute of Technology, HYUNGMOK SON, Harvard University, YIJUN JIANG, MARTIN ZWIERLEIN, WOLFGANG KETTERLE, Massachusetts Institute of Technology — Despite many studies there are still open questions about strong photoassociation in ultracold gases. Photoassociation occurs only at short range and thus can be used as a tool to probe and control the two-body correlation function in an interacting many-body system and to engineer Hamiltonians using dissipation. We propose the possibility to slow down decoherence by photoassociation through the quantum Zeno effect. This can be realized by shining strong photoassociation light on the superposition of the lowest two hyperfine states of Lithium 6.

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