

Abstract Submitted  
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**Entanglement of remote solid-state qubits in diamond** ALP SIPAHIGIL, MICHAEL L. GOLDMAN, Harvard University, ALEXEY V. AKIMOV, Russian Quantum Center, EMRE TOGAN, ETH Zurich, MATTHEW MARKHAM, DANIEL J. TWITCHEN, Element Six Ltd, UK, LIANG JIANG, Yale University, ALEXANDER KUBANEK, MIKHAIL D. LUKIN, Harvard University — Entanglement generation between remote quantum emitters is of great interest for many applications such as long distance quantum communications [1]. In particular, entanglement of two quantum emitters embedded in a solid state matrix is an attractive candidate due to the system’s potential scalability. We will present our results for entangling the electronic spins of two Nitrogen-Vacancy (NV) centers in diamond that are spatially separated by 2 meters.

[1] H.J. Kimble “The quantum internet” *Nature* **453**, 1023-1030 (19 June 2008)

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