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Steady state entanglement of two atoms created by classical driving field OZGUR CAKIR, ALEXANDER A. KLYACHKO, ALEXANDER S. SHUMOVSKY, Faculty of Science Bilkent University Bilkent ANKARA 06800 TURKEY — The stabilization of entanglement[1-7] caused by action of a classical driving field in the system of two-level atoms with the dipole interaction accompanied by spontaneous emission is discussed. An exact solution shows that the maximum amount of concurrence that can be achieved in Lamb-Dicke limit is 0.43. Dependence of entanglement on interatomic distance and classical driving field, beyond Lamb-Dicke limit, is examined numerically. [1] Ö. Çakır, A. Klyachko, and A. Shumovsky, quant-ph/0406081 [2] R. Tanaś and Z. Ficek, J. Opt. B **6**, S610 (2004); quant-ph/0309195. [3] S.G. Clark and A.S. Parkins, Phys. Rev. A **90**, 047905 (2003). [4] B. Kraus and J.I. Cirac, Phys. Rev. Lett. **92**, 013602 (2004) . [5] S. Nicolosi, A. Napoli, A. Messina, F. Petruccione, Phys. Rev. A **70**, 022511 (2004). [6] J.B. Xu and S.B. Li, quant-ph/0401010. [7] M.A. Can, Ö. Çakır, A.A. Klyachko, and A.S. Shumovsky, Phys. Rev. A **68**, 022305 (2003).

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