

Localization in disordered time-dependent lattices

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The Anderson localization is a phenomenon present in disordered systems, where particles eigenstates are exponentially localized and the transport vanishes [1]. Recently it is widely studied in systems of cold atoms in optically generated potentials [2]. Fast periodic modulation of parameters of such a system can lead to qualitatively new behaviour by creating new terms in time averaged Hamiltonian [3]. In disordered systems we can using this method get various types of off-diagonal disorder. We examine effect of such a new part of Hamiltonian on presence of localization, transition between localized and delocalized states, localization length.

References

- [1] P. Anderson *PhysRev.* **109**, 1492–1505 (1958)
- [2] C.Muller, D.Delande *arXiv*, arXiv:1005.0915 (2012)
- [3] E. Arimondo *et al.* *arXiv*, arXiv:1203.1259v2 (2012)