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### **Odd-frequency pairing state in superconducting junctions**

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We have theoretically studied the induced odd-frequency pairing states in ballistic normal metal/superconductor (N/S) junctions where a superconductor has even-frequency symmetry in the bulk. We demonstrate that the pair amplitude in the junction has an admixture of an odd-frequency component due to the breakdown of translational invariance near the N/S interface [1]. We have also studied about the proximity effect in junctions between diffusive normal metals (DN) and superconductors. It is revealed for spin-triplet superconductor that the resulting symmetry in DN is always odd-frequency spin-triplet [2]. The resulting quasiparticle density of state in DN has a zero energy peak [3]. This unusual proximity effect due to the generation of odd-frequency state is also expected in ferromagnet / superconductor junctions [4].

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