



SFB/TRR 21 - Seminar

20. Februar 2013, Tübingen

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Terahertz radiation from $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$ interlayer Josephson junctions: Progress and future strategies

At present, no bright compact sources of coherent radiation exist in the range from approximately 0.5 THz to 1.3 THz. This region is of particular interest for a range of scientific, medical, and security-related applications. Stacks of intrinsic Josephson junctions in extremely anisotropic high-temperature superconductors are one of the most promising candidate devices in this frequency range. In order to generate practically useful levels of power from these stacks, it is necessary to obtain efficient phase-synchronised emission from the largest possible number of individual Josephson junctions. I will discuss recent progress made at Argonne towards this goal, and possible approaches for generating power levels in the milliwatt range, which are necessary for most applications.

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