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Jonathan M. Rosenberg* (jmr@math.umd.edu), Department of Mathematics, University of Maryland, William E. Kirwan Hall, College Park, MD 20742-4015. *The Baum-Connes Conjecture and matching of D-brane charges.*

Quantum field theories in physics (especially string theories, but there are other cases as well) are often related by what physicists call T-dualities. (The “T” stands for “target space.”) These relate a theory on one spacetime X to a theory on another spacetime X' , often with a change of certain auxiliary fields. Such a duality is accompanied by a matching of charges of “D-branes” in one theory to those in the other. Mathematically, this is represented by an isomorphism of K -theories (possibly with twisting) on X and X' , usually with a degree shift. In many cases, this K -theory isomorphism arises from a special case of the Baum-Connes Conjecture. We will discuss this phenomenon, with examples. (Received September 15, 2016)