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# DIRAC EIGENVALUE OPTIMIZATION

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The optimization of Laplace eigenvalues with respect to metrics in a given conformal class naturally leads to a correspondence between critical metrics and harmonic maps to spheres, the maps being given component wise by the corresponding eigenfunctions. In my talk, I will look at the optimization of Dirac eigenvalues and discuss the similarities and differences of this problem with the Laplace one. Indeed, in this case we still obtain a correspondence of critical metric with harmonic maps, but this time the maps are to complex projective spaces and need to satisfy additional conditions. I will also give some applications to the minimization of Dirac eigenvalues on the sphere and the torus. This talk is based on joint work with Mikhail Karpukhin and Iosif Polterovich.