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Theory of electron conductance across a DNA basepair MYEONG LEE, OTTO SANKEY, Arizona State University — In recent years, research on electron tunneling through DNA basepairs has become more important due to its potential application in DNA sequencing technology. The goal is to recognize and identify a specific DNA base by measuring the hydrogen bond mediated tunneling current across a DNA basepair junction. In this talk, we discuss the results of density functional theory on the intrinsic conduction through DNA basepairs (Watson-Crick basepairs, Wobble basepairs, etc), and in particular the role of the hydrogen bond on the tunneling current.

Otto Sankey
Arizona State University

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