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97331. *How efficiently can one untangle a double-twist? Waving is believing!*

Physicists and mathematicians have long known it is possible to unravel a double-twist in three space, embodied in motions like the Dirac belt trick, Feynman plate trick, or Philippine candle dance. Quaternions can reveal how efficiently and beautifully this can be done, providing both theoretical constraints on the minimal required complexity, and insights into the geometry and level of simplicity possible. You will emerge knowing how to perform the quaternionic unraveling with your hand. (Received January 26, 2018)