

Achim Kempf

Title: Properties and prospects of superoscillations

Abstract: I will discuss several aspects of superoscillations. First, I will discuss methods for generating superoscillations efficiently and stably. Then, I will show that in circumstances where superoscillations cannot be used for superresolution, they may still be useful, namely for what may be called superabsorption. Further, I propose that the study of superoscillations may be useful for generalizing the Shannon-Hartley noisy channel capacity theorem. Finally, I will discuss how the phenomenon of superoscillations naturally generalizes beyond bandlimited functions.