

Title: Heisenberg ultrahyperbolic operator and Gauss' hypergeometric series ${}_2F_1$

Abstract

The wave operator $\square_{p,q}$ is a typical example of an ultrahyperbolic differential operator on Euclidean space $\mathbb{R}^{p,q}(= \mathbb{R}^n)$. In the work of Kobayashi–Ørsted it is shown that the space of solutions to $\square_{p,q}$ has an exceptional symmetry of the orthogonal group $O(p,q)$ (called the minimal representation). In this talk we consider a Heisenberg ultrahyperbolic operator $\square_{\mathbb{H}}$ on Heisenberg space \mathbb{H}^3 and describe the symmetry of the solution space to $\square_{\mathbb{H}}$ in terms of Gauss' hypergeometric series ${}_2F_1$. This is based on a joint work with B. Ørsted.