
TUOXIN LI, University of British Columbia

Beckner's inequality for axially symmetric functions on \mathbb{S}^4 and \mathbb{S}^6

In this talk, we will show that the solutions for a Q-curvature type equation with a Paneitz operator on \mathbb{S}^n in axially symmetric function spaces are constants when $n=4, 6$. As a result, we establish sharp Beckner's inequalities, which can be viewed as a higher order Moser-Trudinger-Onofri type inequality. We first reduce the equation to 1 dimension by axially symmetry and then study the coefficient of the solution in a suitable orthogonal expansion. I will also introduce some related open problems and point out the difficulties. It is a joint work with Juncheng Wei and Zikai Ye.