

『作用素論セミナー』

日時： 2024年4月26日(金) 午後3時30分－5時00分

場所： 京都大学人間・環境学研究科棟 2階 226号室

講演者： 笥知之氏 (筑波大学)

題目： Mean value operators on the sphere

要旨：

In this talk, we deal with the mean value operator M^r on \mathbb{S}^n defined by

$$M^r f(x) = \frac{1}{\text{vol}(S_r(x))} \int_{y \in S_r(x)} f(y) d\mu(y), \quad f \in C^\infty(\mathbb{S}^n),$$

where $S_r(x)$ is the geodesic sphere with radius r and center x and $d\mu$ is the measure on $S_r(x)$ induced from the canonical measure on \mathbb{S}^n . We will give conditions on r for M^r being injective, surjective (or both). For example, in the case $n = 3$, M^r is injective but not surjective if and only if r/π is a Liouville number. We will also give some related results on Gegenbauer polynomials. This is a joint work with J. Christensen, F. Gonzalez, and J. Wang.

連絡先： 足立 匡義 (京都大学大学院人間・環境学研究科, 075-753-2956)

峯 拓矢 (京都工繊大基盤科学系, 075-724-7834)