

# On a proof of the boundedness of Bergman projection in various Banach spaces and some related questions

**Abstract:** We give a simple proof of the boundedness of Bergman projection in various Banach spaces of functions on the unit disc in the complex plane. The approach of the paper is based on the idea of V.P.Zaharyuta, V.I.Yudovich (1964) where the boundedness of the Bergman projection in Lebesgue spaces was proved using Calderon-Zygmund operators. We exploit this approach and treat the cases of variable exponent Lebesgue space, Orlicz space and variable exponent generalized Morrey space. In the case of variable exponent Lebesgue space the boundedness results is known, so in that case we provide a simpler proof. The other two cases are new. The major idea of this paper is to show that the approach can be applied to a wide range of function spaces. This opens a door in a sense for introducing and studying new function spaces of Bergman type in complex analysis. We also study the rate of growth of functions near the boundary in spaces under consideration and their approximation by mollifying dilations. Joint work with Stefan Samko and Humberto Rafeiro.

**Dr. A. Karapetyants**

Southern Federal University, Rostov-na-Donu, Russia

Fecha: Martes 21 de Noviembre, a las 12:30 horas.

Lugar: Seminario de Ecología, Facultad de Ciencias.