

GENERALIZED NOTION OF A TRACE FOR VON NEUMANN ALGEBRAS

B. S. Zakirov

On a von Neumann algebra M , we consider traces with values in the algebra L^0 of measurable complex-valued functions. We show that every faithful normal L^0 -valued trace on M generates an L^0 -valued metric on the algebra of measurable operators that are affiliated with M . Moreover, convergence in this metric coincides with local convergence in measure.

Key words and phrases: von Neumann algebra, measurable operator, local convergence in measure, vector-valued trace.

Zakirov Botir Sabitovich

Tashkent Institute of Railway
Transport Engineers,
Tashkent, 100167 Uzbekistan
E-mail: botirzakirov@list.ru

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