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ABSTRACTS

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Commutativity of projections and characterization of tracial functionals on von Neumann algebras

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We prove that either of inequalities of Peierls-Bogoliubov and Araki-Lieb-Thirring characterizes the tracial functionals among all positive functionals on a C^* -algebra ([1], [2]). We give the affirmative answer to the question of J. Zemánek (review Zbl 0942.15015, Zentralblatt MATH).

We also prove that either of inequalities Hölder, Cauchy-Schwarz-Bunyakovskii, Golden-Tompson, etc., which holds only for projections characterizes the tracial functionals among all positive normal functionals on a von Neumann algebra [3]-[5]. Most of these inequalities imply commutativity of projections. We characterize traces among arbitrary weights on a von Neumann algebra in terms of the commutation of products of projections under the weight sign ([3], [4]).

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On some concepts of stability and instability for cocycles of linear operators in Banach spaces

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In this paper we give characterizations of some asymptotic behaviors as stability and instability for cocycles of linear operators in Banach spaces. Some important results for exponential and polynomial stability and instability are obtained.