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Sabine Burgdorf* (sabine.burgdorf@epfl.ch), EPFL, SB-MATHGEOM-EGG, Station 8, 1015 Lausanne, Switzerland. *Tracial moment problems related to Connes' embedding problem.*

The tracial moment problem is the problem of characterizing tracial linear functionals on the free polynomial ring over the real or complex numbers which are induced by integration with respect to some positive measure. This problem can be considered in different frameworks, e.g. tracial moments of a probability measure on hermitian matrices of finite size, or obtained by taking traces in a finite von Neumann algebra. I will present several aspects of tracial moment problems which are related to the embedding problem of Connes on von Neumann algebras and give an overview on the current state of knowledge on these problems. (Received September 25, 2012)