

1117-47-289

Konstantin A. Makarov*, Department of Mathematics, University of Missouri, Department of Mathematics, University of Miss, Columbia, MO 65211, and **Eduard Tsekanovskii** (tsekanov@niagra.edu), Department of Mathematics, Niagara University, Lewiston, NY 14109.
On dissipative and non-unitary solutions to operator commutation relations.

We study the (generalized) semi-Weyl commutation relations $U_gAU_g^* = g(A)$, where A is a densely defined operator and $G \ni g \mapsto U_g$ is a unitary representation of the subgroup G of the group of affine transformations of the real axis preserving the orientation. If A is a symmetric operator, the group G induces an action/flow on the operator unit ball of contractive transformations from $\text{Ker}(A^* - iI)$ to $\text{Ker}(A^* + iI)$. We establish several fixed point theorems for this flow. In the case of one-parameter continuous subgroups of linear transformations, self-adjoint (maximal dissipative) operators associated with the fixed points of the flow give rise to solutions of the (restricted) generalized Weyl commutation relations. We show that in the dissipative setting, the restricted Weyl relations admit a variety of non-unitarily equivalent representations. (Received January 16, 2016)