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**Daniel A Ramras** and **Mentor Stafa\*** (mstafa@tulane.edu). *Homological stability of representation spaces.*

We study the spaces of pairwise commuting  $n$ -tuples in a Lie group  $G$ , that is  $Hom(\mathbb{Z}^n, G)$ , and their homological, when the group  $G$  is in a sequence of classical Lie groups. We show that for  $n \geq 1$  these spaces, and other analogues, satisfy homological stability as  $G$  varies in a sequence of classical Lie groups. Moreover, we find a bound for the stable range. In our work we use the theory of representation stability and FI-modules. (Received September 13, 2018)