C. Cuenca

Department of Mathematics, Harvard University, Cambridge, U.S.A.
`cesar.a.cuenk@gmail.com`

G. Olshanski

(1) Institute for Information Transmission Problems, Moscow, Russia
(2) Skolkovo Institute of Science and Technology, Moscow, Russia
(3) Faculty of Mathematics, HSE University, Moscow, Russia
`olsh2007@gmail.com`

Mackey-Type Identity for Invariant Functions on Lie Algebras of Finite Unitary Groups and an Application

The Mackey-type identity mentioned in the title relates the operations of parabolic induction and restriction for invariant functions on the Lie algebras of the finite unitary groups $U(N, \mathbb{F}_{q^2})$. This result is applied to constructing positive harmonic functions on a new branching graph with a negative Hall-Littlewood parameter, as introduced in the authors' previous paper [Advances Math. 395 (2022), 108087]. This in turn implies the existence of an infinite-parameter family of invariant measures for the coadjoint action of an infinite-dimensional analogue of the groups $U(N, \mathbb{F}_{q^2})$.