

## 2023 泛函分析及空间理论天元暑期研讨班

# Analytic subalgebras of weighted Fourier algebras and complexification of Lie groups

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### Abstract

The predual of a group von Neumann algebra has a natural commutative Banach algebra structure, which we call the Fourier algebra. The Fourier algebra is known to recover the underlying group via its Gelfand spectrum, i.e. elements of the spectrum are exactly evaluations of the points of the group. In this talk we consider the Gelfand spectra of weighted Fourier algebras on Lie groups with connections to complexifications. Determining those spectra has been resolved by a recent result by Giselsson-Turowska (shortly, GT) using abstract complexification of general Lie groups with some restrictions of the "weights". The mentioned result covers most of the examples from the previous result by Ghandehari-Lee-Ludwig-Spronk-Turowska (shortly, GLLST) via a fundamentally different approach. We present a result from a joint work with Heon Lee suggesting to go back to the approach by GLLST (based on the result of GT), namely focusing on a common dense subalgebra, where the elements of the resulting spectrum are, indeed, evaluations of the points of the complexification of the underlying Lie group on the mentioned subalgebra. The new method provides such a dense subalgebra (we call it the analytic subalgebra) in a unified manner for general Lie groups, which clears many of the technicalities in GLLST.

**Time:** Saturday, August 5, 2023, 14:30-16:00

**Venue:** Zheng Xin Building, Room 21

More information:

<http://im.hit.edu.cn/2023/0710/c15123a320434/page.htm>

