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## Elliptic Integrable Models and Their Spectra from Superconformal Indices

*Thursday 5 September 2024 10:00 (30 minutes)*

In this talk, I will review our recent progress in understanding the intricate relationship between elliptic finite-difference integrable models and 4D superconformal indices. Although this connection has been known for some time, we have recently achieved significant advancements in this area.

I will begin by briefly reviewing how these models arise in superconformal index computations, particularly when surface defects are introduced into 4D gauge theory. I will then discuss several such models that we have recently derived using these constructions. Finally, I will present our novel, physics-inspired approach to deriving the spectra of elliptic integrable models that have not been previously known. If time permits, I will also touch upon the relation of our construction to 5D ramified instantons.

This talk is based on a series of works in collaboration with Shlomo Razamat, Belal Nazzal, and Hee-Cheol Kim.

### **Link to publication (if applicable)**

<https://arxiv.org/abs/2305.09718>

<https://arxiv.org/abs/2303.07368>

+ one coming in June/July

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