

## **The $AdS_5 \times S^5$ superstring from 4D Chern-Simons theory**

*Monday, 22 November 2021 12:00 (15 minutes)*

Recently, a unified picture to describe integrable systems has been established by Costello, Witten and Yamazaki. In the case of 2D integrable field theories, Costello and Yamazaki proposed that by starting from a certain 4D Chern-Simons (CS) theory, one can construct classically integrable field theories systematically by taking a meromorphic 1-form and adopting an appropriate boundary condition. In this talk, I will explain how the  $AdS_5 \times S^5$  supercoset sigma model and its integrable deformations can be reproduced from a 4D CS theory by generalizing the procedure for the 2D principal chiral model developed by Delduc et al [arXiv:1909.13824]. This talk is based on works (2003.07309, 2005.04950) with Osamu Fukushima and Kentaroh Yoshida in Kyoto University.

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**Session Classification:** Short talks