

# 早稲田大学整数論セミナーの予定 (2023年度 第6回)

日時：2023年6月30日（金）17:00～18:30

場所：〒169-8555 東京都新宿区大久保3-4-1  
早稲田大学西早稲田キャンパス（旧・大久保キャンパス）  
59号館4階420室（59-420）  
対面と Zoom ミーティングによるハイブリッド開催

講演者：前田 洋太氏（ソニーグループ株式会社）

タイトル：Modular interpretation of the moduli spaces of weighted pointed stable rational curves

アブストラクト：It is known that the moduli space of pointed smooth rational curves has many compactifications. The most famous one is the Deligne-Mumford compactification, and Keel and Kapranov described it as a blowup of  $(\mathbb{P}^1)^{n-3}$ . The "intermediate objects" of this process have a moduli interpretation of weighted pointed curves, and their modular interpretation, that is boundary points, is an interesting problem in the log minimal model program as in the case of  $M_g$ .

On the other hand, in some cases they can also be realized as ball quotients ( $\doteq$  a higher dimensional analogue of arithmetic quotients by the upper half plane) through the period of K3 surfaces or more generally, the monodromy of hypergeometric functions. On them, there exist modular forms as number-theoretic objects, which give a description of canonical bundles.

Based on them, in this talk we will classify their compactifications by ones obtained through the Borchers lifts constructed by Kondo. The determination of the log canonical model will be also discussed. The talk is based on joint work with Klaus Hulek (Hannover).