

# Compactifying the stack of higher spin curves without ramifications

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## **Abstract**

We review recent work on  $r$ -spin curves. The moduli stack  $S$  of  $r$ th roots of the canonical bundle on smooth stable curves is an étale covering of the moduli stack  $M$  of smooth stable curves. We provide compactifications for  $S$  and  $M$ , which allow us to extend the covering without ramifications. We relate this construction to the preexisting ones and review the definition of the Witten top Chern class in  $K$ -theory and rational Chow rings.