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Properness for scaled gauged maps

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ACCEPTED MANUSCRIPT

PROPERNESS FOR SCALED GAUGED MAPS

EDUARDO GONZÁLEZ, PABLO SOLIS, AND CHRIS T. WOODWARD

Abstract. We prove properness of moduli stacks of gauged maps satisfying a stability condition introduced by Mundet [42], Schmitt [48] and Ziltener [59]. The proof combines a git construction of Schmitt [48], properness for twisted stable maps by Abramovich-Vistoli [1], a variation of a boundedness argument due to Ciocan-Fontanine-Kim-Maulik [13], and a removal of singularities for bundles on surfaces in Colliot-Thélène-Sansuc [14].

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1. Introduction

The moduli stack of maps from a curve to stack quotient of a smooth projective variety by the action of a complex reductive group has a natural stability condition introduced by Mundet in [42] and investigated further in Schmitt [48, 49]; the condition generalizes stability for bundles over a curve introduced by Mumford, Narasimhan-Seshadri and Ramanathan [47]. In an earlier paper [25] the first and third authors used the moduli of Mundet-stable maps to give a formula that relates the genus zero gauged Gromov-Witten invariants and Gromov-Witten invariants of the git quotient of a smooth projective variety with reductive group action, termed a quantum

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