

KAC–WAKIMOTO CHARACTERS AND ALMOST HOLOMORPHIC MODULAR FORMS

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ABSTRACT

In joint work with Amanda Folsom, we resolve a question of Kac, and explain the automorphic properties of certain characters due to Kac and Wakimoto. We prove that they are essentially holomorphic parts of certain generalizations of harmonic weak Maass forms which we call “almost harmonic Maass forms”. Loosely speaking, such functions may be viewed as sums of harmonic weak Maass forms under iterates of the raising operator (themselves therefore non-harmonic weak Maass forms), multiplied by almost holomorphic modular forms.