

Introduction to mock modular forms

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Modular forms have played central and far-reaching roles in number theory and mathematics over the last two centuries. Their footprints can be seen in the elliptic functions of the early 1800s, and their prominence has risen since then. The theory and importance of their younger descendants, mock modular forms, has evolved in many analogous ways, and has also allowed for many new applications. The general term mock modular form was not defined in the literature until 2007 by Zagier, as related to Bruiner and Funke's harmonic Maass forms from 2004. However, we know in hindsight, due to important work of Zagier, that Ramanujan's mock theta functions from 1920 are much older, fundamental, examples of mock modular forms. In this talk we will give an accessible introduction to the subject of mock modular forms, highlighting basic principles, definitions, examples, and applications.