1093-11-148   **Bruce C Berndt** and **Armin Straub*** (`arminstraub@mpim-bonn.mpg.de`), Max Planck Institute for Mathematics, Vivatsgasse 7, 53111 Bonn, Germany. *On a secant Dirichlet series and Eichler integrals of Eisenstein series.*

This talk is motivated by the secant Dirichlet series $\psi_s(\tau) = \sum_{n=1}^{\infty} \frac{\sec(\pi n \tau)}{n^s}$, recently introduced and studied by Lalín, Rodrigue and Rogers as a variation of results of Ramanujan. We review some of its properties, which include a modular functional equation when s is even, and demonstrate that the values $\psi_{2m}(\sqrt{r})$, with $r > 0$ rational, are rational multiples of π^{2m}.

These properties are then put into the context of Eichler integrals of general Eisenstein series. In particular, we determine the period polynomials of such Eichler integrals and indicate that they appear to give rise to unimodular polynomials, an observation which complements recent results on zeros of period polynomials of cusp forms by Conrey, Farmer and Imamoglu. (Received August 10, 2013)