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Applications aux sommes elliptiques d'Apostol-Dedekind-Zagier. (French. English, French summaries) [Applications to elliptic Apostol-Dedekind-Zagier sums]

C. R. Math. Acad. Sci. Paris **339** (2004), *no. 8,* 529–532.

This note lives on the background of a former note by the same author [C. R. Math. Acad. Sci. Paris **339** (2004), no. 7, 457–462; MR2099541 (2005h:11195)]. The author gives two applications of his older work concerning multiple elliptic Apostol-Dedekind-Zagier sums. These elliptic sums are defined by means of Jacobi modular forms of two variables:

$$D_\tau(z,\varphi) = e(E_L(z,\varphi)/2)\frac{\mathcal{K}_L(z+\varphi)}{\mathcal{K}_L(z)\mathcal{K}_L(\varphi)},$$

$$\mathcal{K}_L = ze^{-zz^*/2}\prod_{l\in L, l\neq 0}(1-z/l)e^{z/l+(z/l)^2/2}$$

($\mathcal{K}_L$ is the Klein function). For $\tau\in\mathfrak{H}$, $\operatorname{Im}\tau\to\infty$ these elliptic sums give the classical Apostol-Dedekind-Zagier multiple sums, going back to a work by Apostol from 1950 and Zagier from 1973. Finally, a reciprocity law à la Dedekind for these sums is given.

Reviewed by *Rolf Berndt*

References

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Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.