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Aaron Pollack* (apollack@math.duke.edu). *A quaternionic Saito-Kurokawa lift.*

The Saito-Kurokawa lift is a very special instance of a theta correspondence, which takes holomorphic modular forms on metaplectic SL_2 to classical holomorphic Siegel modular forms on $SO(2, 3) = PGSp_4$. Moreover, the Fourier coefficients of the lift are neatly related to those of the input. Following work of Gan, Gross, Savin, Wallach, Weissman, and the speaker, there is a good notion of "modular forms" on the groups $SO(4, n)$ for $n \geq 3$, based on the so-called quaternionic discrete series. I will discuss a very special theta lift from classical holomorphic Siegel modular forms on Sp_4 to these quaternionic modular forms on $SO(4, 4)$, which is a close analogue of the Saito-Kurokawa lift. As an application, one obtains cusp forms on the exceptional group G_2 with all algebraic Fourier coefficients. (Received February 05, 2020)