Quasi Jacobi forms and moduli space of enhanced elliptic curve

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The project of Gauss-Manin connection in disguise aims at giving a systematic way of understanding classical modular forms by studying moduli spaces with extra data. In this talk, I will describe recent joint work with H. Movasati for understanding of quasi Jacobi forms. During this work, we find some fake period domain. Such moduli spaces are also useful for studying Hodge loci, that we will briefly mention it in the case of product of two elliptic curves.