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Zheng Zhang* (zzhang@math.tamu.edu). *On motivic realizations for variations of Hodge structure of Calabi-Yau type over Hermitian symmetric domains.*

Based on the work of Gross and Sheng-Zuo, Friedman and Laza have classified variations of real Hodge structure of Calabi-Yau type over Hermitian symmetric domains. Specifically, over every irreducible Hermitian symmetric domain there exists a canonical variation of real Hodge structure of Calabi-Yau type. A natural question to ask is whether the canonical Hermitian Calabi-Yau variations of Hodge structure come from families of Calabi-Yau manifolds (geometric realization). In general, this is very difficult and is still open for small dimensional domains. We will discuss an intermediate question, namely does the canonical variations occur in algebraic geometry as sub-variations of Hodge structure of those coming from families of algebraic varieties (motivic realization). In particular, we will give motivic realizations for the canonical Calabi-Yau variations over irreducible tube domains of type A using abelian varieties of Weil type. (Received January 18, 2016)