

# Infinitesimal variations of Hodge structure at infinity

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The analysis of the local and infinitesimal behavior of degenerating polarized variations of Hodge structure allows the introduction of the notion of infinitesimal variation of Hodge structure at infinity. It is shown that all such structures can be integrated to polarized variations of Hodge structure and that, conversely, all are limits of infinitesimal variations of Hodge structure at finite points. As an illustration of the rich information encoded in this new structure, some instances of the maximal dimension problem for this type of infinitesimal variation are presented and contrasted with the “classical” case of IVHS at finite points. This is joint work with E. Cattani.