

## Framed height pairing

*Wednesday, 12 June 2024 10:00 (1 hour)*

In abstract Hodge theory, Deligne's splitting measures how far a mixed Hodge structure is from being real split. An allied notion, developed by S. Bloch, R.Hain et al. , is that of a height for a special class of mixed Hodge structures called Biextensions. The notion of Biextension is closely related to algebraic cycles homologous to zero. Given two such cycles in complementary codimensions in an ambient smooth and projective variety, a certain cohomology group associated to the pair gives an example of a Biextension mixed Hodge structure. The height associated to such a Biextension is exactly the same as the archimedean component of the height pairing of the two cycles developed by Bloch and Beilinson. In a previous paper (<https://doi.org/10.1112/plms.12443>), along with J.I.Burgos Gil and G. Pearlstein, the speaker defined the notion of height for oriented mixed Hodge structures. These mixed Hodge structures arise out of Bloch's higher cycles in complementary codimensions, and are more complicated than the Biextensions.

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