

Title:

Height pairing on higher cycles and mixed Hodge structures.

Abstract:

The height pairing between algebraic cycles over global fields is an important arithmetic invariant. It can be written as sum of local contributions, one for each place of the ground field. Following Richard Hain, the Archimedean component of the height pairing can be interpreted in terms of an invariant of a certain mixed Hodge structure, called Biextension. In the paper <https://doi.org/10.1016/j.aim.2019.02.003>, we defined a height pairing for higher cycles as a consequence of arithmetic intersection theory of higher arithmetic cycles. In this talk we will explore the Archimedean contribution of this new height pairing and interpret it as an invariant associated to a mixed Hodge structure. This is joint work with J.I. Burgos Gil and G. Pearlstein (<https://arxiv.org/abs/2007.06036>).