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Yunqing Tang* (yqtang@math.harvard.edu). *Cycles in the de Rham cohomology of abelian varieties over number fields.*

In his 1982 paper, Ogus defined a class of cycles in the de Rham cohomology of smooth proper varieties over number fields. In the case of abelian varieties, this class includes all the Hodge cycles by the work of Deligne, Ogus and Blasius. Ogus predicted that all such cycles are Hodge. In this talk, I will first introduce Ogus' conjecture as a crystalline analogue of Mumford–Tate conjecture and explain how a theorem of Bost on algebraic foliation is related. After this, I will discuss the proof of Ogus' conjecture for some families of abelian varieties under the assumption that the cycles lie in the Betti cohomology with real coefficients. (Received August 19, 2016)