

Arithmetic and Algebraic Geometry: A conference in honor of Ofer Gabber
on the occasion of his 60th birthday

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**Perfectoid Cohen-Macaulay rings and homological
aspects of commutative algebra in mixed
characteristic**

Tuesday, June 12, 2018 2:30 PM (1 hour)

The homological turn in commutative algebra due to Auslander and Serre was pushed forward by Peskine and Szpiro with a systematic use of the Frobenius functor, which led to tight closure theory, a powerful instrument developed by Hochster and Huneke to study singularities in characteristic p . We shall report on recent advances in the mixed characteristic case, where perfectoid Cohen-Macaulay algebras play the role of absolute integral closures in characteristic p , and lead to a mixed characteristic analog of tight closure theory.

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