

## TIGHT CLOSURE IN NON-EXCELLENT RINGS

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ABSTRACT. Tight closure in rings of equicharacteristic  $p$  is defined for all Noetherian rings and many good properties are known in general. However, some properties have been demonstrated only for excellent rings. This talk will be about the limitations. I will discuss how to construct a local integral domain  $R$  with a homomorphic image  $R/xR$  such that tight closure does not persist from  $R$  to  $R/xR$ . Tight closure will also not have the colon-capturing property in  $R/xR$ . Finally I will offer an alternate definition for local non-excellent rings which largely circumvents the difficulties.