

# ON INFINITESIMAL CONDITIONS OF MORPHISMS ON FORMAL SCHEMES

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ABSTRACT. In the literature, the infinitesimal conditions on the category of formal schemes are sometimes considered. However, there isn't any published systematic study of this morphisms (unramified, smooth and etale) on formal schemes. The recent research establishing Grothendieck duality on formal schemes (by Alonso, Jeremías and Lipman) shows the interest of this study even for non adic morphisms between noetherian formal schemes. In particular, they are strongly related to the calculus of residues.

In this talk, first we explain what a formal scheme is and show several examples. Then we give some results about infinitesimal conditions of adic and non adic morphisms in relation with the analogous results on usual schemes. We illustrate these results by examples. Finally, time permitting, we'll try to connect the infinitesimal conditions with an appropriate definition of relative differential forms in this setting.

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