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**Ruochuan Liu\*** ([rliu@math.ias.edu](mailto:rliu@math.ias.edu)), 338 Olden Lane, Princeton, NJ 08540. *On a conjecture of Rapoport and Zink.* Preliminary report.

In their book "Period spaces for  $p$ -divisible groups", Rapoport and Zink construct the rigid analytic period spaces for Fontaine's filtered  $\varphi$ -modules. They further conjecture the existence of certain local systems over some étale bijective coverings of the period spaces. We prove this conjecture by proposing some new constructions in Relative  $p$ -adic Hodge theory. This is a joint work with Kiran Kedlaya. (Received September 14, 2010)