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Kiran Kedlaya, Ruochuan Liu and Jonathan Pottharst* (jay@math.harvard.edu),
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Iwasawa theory for trianguline representaitons. Preliminary report.

Although the Iwasawa theory of number fields and abelian varieties is fairly well understood, the two general programs for the Iwasawa theory of general classes of p -adic Galois representations each have significant drawbacks. The first, which applies to "ordinary" representations, is fairly easy to understand, but it gives little insight into the phenomena encountered in a more general setting. The second, which applies to arbitrary potentially semistable representations, is so steeped in abstract p -adic Hodge theory that it does not shed light on what we should expect to find. We present work in progress that shows how "trianguline" representations, which are defined by means of (φ, Γ) -modules over the Robba ring, can be treated in a manner similar to ordinary representations. It is our hope that, in this setting, the peculiarities of nonordinary Iwasawa theory will become more intuitive. (Received September 05, 2006)