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Hui June Zhu*, Department of Mathematics, SUNY at Buffalo, Buffalo, NY 14228. *Reduction of crystalline representations and generalized Serre weights.*

We compute mod p reductions of 2-dimensional crystalline representations of G_K , where K is a finite unramified extension of \mathbf{Q}_p , and hence generalize some results of Deligne, Fontaine-Serre, and Edixhoven to Galois representations arising from Hilbert modular forms. As applications, we prove one direction of a recent conjecture of Buzzard-Diamond-Jarvis on Serre weights. (Received September 21, 2009)