Wanlin Li, Elena Mantovan, Rachel Pries* (pries@math.colostate.edu) and Yunqing Tang. Smooth curves in positive characteristic whose Newton polygons have many slopes of 1/2.

This talk is about the question of whether there exist smooth curves in characteristic $p$ whose Newton polygons are far from ordinary. I will describe how clutching morphisms and PEL-type Shimura varieties can be used to give results about this question. As an application, we find infinitely many situations when a conjecture of Oort is true and when the Newton polygon stratification of the moduli space of abelian varieties has an unlikely intersection with the Torelli locus. For example, when $p = 2 \mod 3$ and $g > 1$, we prove there exists a smooth curve of genus $g$ in characteristic $p$ whose Newton polygon has slopes only 0,1/2,1 and such that the multiplicity of the slope 1/2 is about $2g/3$. (Received September 01, 2019)