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Emma Previato* (ep@bu.edu), Department of Mathematics and Statistics, Boston University, Boston, MA 02215. *Automorphism groups and splittability*. Preliminary report.

A principally polarized abelian variety over \mathbb{C} is said to be completely split if it isogenous to a product of elliptic curves. In a 1993 paper, T. Ekedahl and J.-P. Serre asked whether there exist curves of any genus whose Jacobian splits completely. They gave examples of modular curves with completely split Jacobian. A different approach, initiated by J. Paulhus in her 2017 Ph.D. thesis, constructs examples using the automorphism group of the curve. In recent work (arXiv:1603.00331), Paulhus and A. Rojas give new examples using both known lists of group actions and computational methods. These questions have not been investigated in positive characteristic. We use computational databases to list several possibly relevant features of modular curves reduced to positive characteristic, such as their automorphism groups, Weil polynomials, supersingularity. As the order of the field increases, we record different behaviors. The ultimate goal is to identify properties that characterize complete splittability. This is work in progress with Valentijn Karemaker, issuing from a project with Ekin Ozman originated at IHES in 2011. (Received February 06, 2018)