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*Schäffer's Conjecture and the Modular Method*

Schäffer's conjecture predicts that the only natural solutions to $1^k+2^k+\cdots+x^k=y^n$ are $(x,y,k,n)=(1,1,k,n),(24,70,2,2)$, except when $(k,n)\in\{(1,2),(3,2),(3,4),(5,2)\}$ in which case there are infinitely many such solutions. Bennett-György-Pintér have proved the conjecture for $1\leq k\leq 11$ using a combination of methods including linear forms of logarithms and the modular method.

Our goal was to see how far we could push the modular method to avoid using linear forms of logarithms. By using only the modular method in combination with an expanded set of coupled generalized Fermat equations which are derived using descent, we explain how to asymptotically solve Schäffer's conjecture for select $k$, additionally using the multi-Frey technique and theorem of Darmon-Merel.