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A symmetric version of Chabauty's method on families of hyperelliptic curves

It is known since Faltings that hyperelliptic curves have finitely many rational points, and several heuristics suggest that 100% of them have no rational points apart from ∞. Using similar heuristics, we expect 100% of the hyperelliptic curves to have no nontrivial degree-d points. We will discuss how Chabauty's method could be applied to families of hyperelliptic curves to obtain a bound on the number of non-trivial degree-d points on a certain family of hyperelliptic curves. This can be combined with the recent result of Bhargava and Gross on the distribution of 2-Selmer elements of hyperelliptic curves, allowing one to take the first steps towards describing the statistics of non-trivial degree-d points.