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Modular hyperbolas

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Abstract. We give a survey of a variety of recent results about the distribution and some geometric properties of points (x, y) on modular hyperbolas $xy \equiv a \pmod{m}$. We also outline a very diverse range of applications of such results, discuss multivariate generalisations and suggest a number of open problems of different levels of difficulty.

Keywords and phrases: modular hyperbola, congruences, exponential sums, character sums

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