PART 3

New Dimensions

HD representations

instead of describing 1D isogeny $\varphi : E \to E'$ by its kernel $\ker \varphi$,
we can also describe it by $E, P_1, \ldots, P_n, \varphi(P_1), \ldots, \varphi(P_n)$, for enough points $P_i \in E$

then, with Kani's lemma & improvements, compute $\varphi(Q)$ for any other $Q \in E$

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In the words of the HD master

"If we know the value of $\varphi : E \to E'$ on enough nice points, then we know how to efficiently evaluate it everywhere"

- Damien Robert