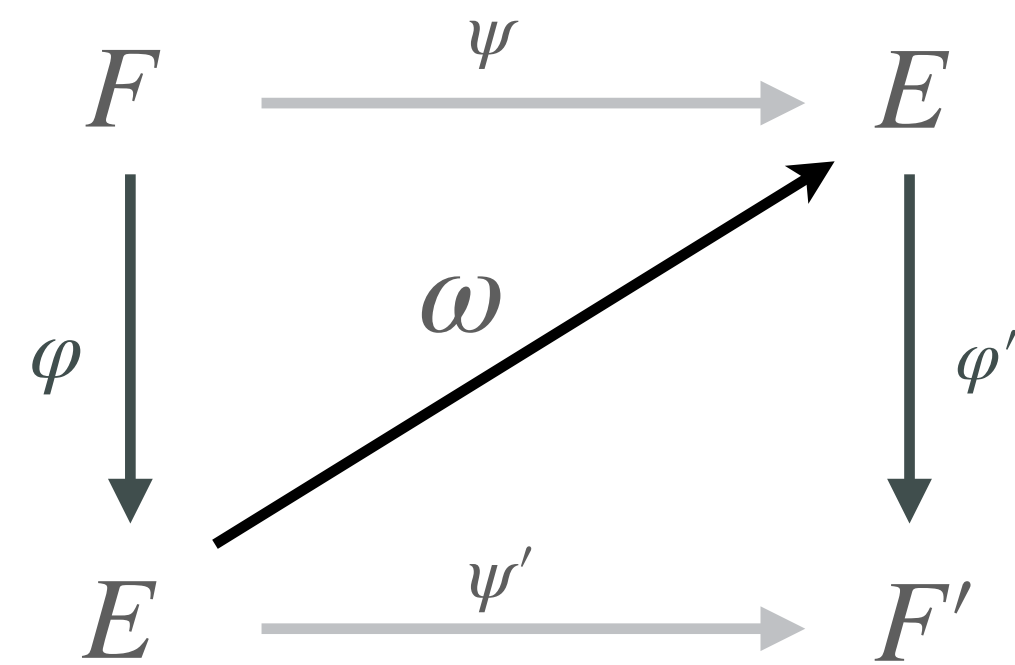


PART 4 2D Future

Nakagawa - Onuki trick (2023)



say we want to create such
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and some $\omega \in \text{End}(E)$
of degree $q(2^a - q)$

we can find a suitable isogeny
 $\varphi : F \rightarrow E$ using Kani!!!



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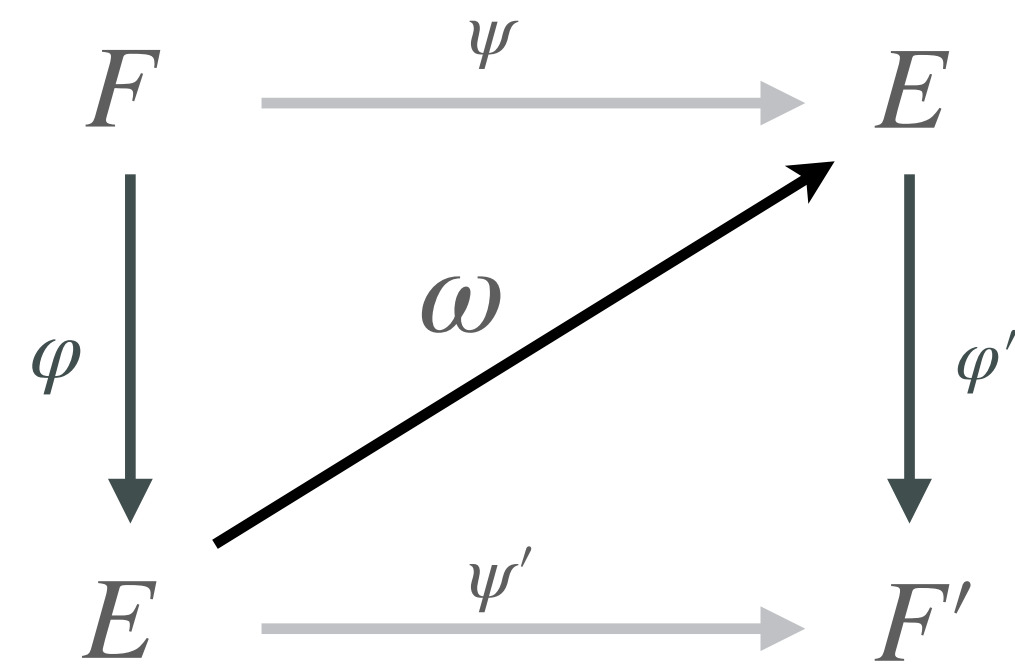
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$$\Phi : E \times E \rightarrow F \times F'$$

of degree 2^a

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2

(ignoring some isogeny maths)
then the kernel of Φ should be
given by $[q]P, \omega(P)$ for $P \in E[2^a]$

But we know these!!
We can compute 2D Φ using Kani