# Gorenstein orders and abelian varieties over finite fields

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Thanks to a result of Deligne, the category of ordinary abelian varieties over a fixed finite field can be described in terms of finite free Z-modules equipped with a linear operator F (playing the role of Frobenius) satisfying certain axioms. Deligne's result is based on Serre-Tate canonical lifting. In a recent joint work with Tommaso Centeleghe, we prove a similar result for the full subcategory of all abelian varieties over the prime field supported on non-real Weil numbers, thereby obtaining a description of non-ordinary isogeny classes in Deligne's spirit. However, we must substitute lifting to characteristic zero by the commutative algebra of Gorenstein orders, because thanks to work of Chai, Conrad and Oort functorial lifting is not always possible.