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A Strong WGC from the Modular Bootstrap

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In its mildest version, the Weak Gravity Conjecture postulates the existence of superextremal particles of any charge Q. This is not really a constraint on the low-energy EFT, since this charge could a priori be arbitrarily large, resulting in a very massive WGC particle. This applies to (quasi-)sublattice versions of the conjecture too, where the role of Q is played by the index of the WGC sublattice. In this talk we will see how, in the context of worldsheet string theory, it is possible to obtain a universal upper bound on Q in the bosonic sector from the modular bootstrap, thus obtaining a strong form of the WGC in the closed string sector.

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