

# Rigid Orientifold Vacua in 6d with Broken SUSY

*Tuesday, 25 June 2024 17:30 (15 minutes)*

Brane Supersymmetry Breaking (BSB) is a phenomenon occurring in lower dimensional orientifold vacua in which supersymmetry is broken without admitting tachyonic instabilities. Such vacua are characterised by the simultaneous presence of a tree-level supersymmetric closed string sector coupled with a non-supersymmetric open string one, which underlies a non-linear realisation of supersymmetry. After reviewing the original construction in six dimensions built on the  $T^4/Z_2$  orbifold, I will present an almost rigid variation that can only be deformed via an overall D-branes recombination. Afterwards, I will describe the BSB orientifold built upon the  $T^4/Z_4$  orbifold in which, in contrast to the previous case, the presence of fractional orientifold planes forbids any further continuous deformation. Finally, I will briefly comment on the structure of the gauge kinetic functions entering the low-energy effective action and the unitarity constraints arising from the presence of 2d defects coupled to the R-R 2-forms required by the Green-Schwarz-Sagnotti mechanism.

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**Session Classification:** Parallel session