

## Remote talk - Spectral Flow Construction of $N = 2$ Superconformal Orbifolds (T: 50mn + Q: 10mn)

*vendredi 13 mai 2022 14:00 (1 heure)*

Ten-dimensional Superstring theory unifies the Standard Model and quantum gravity. To obtain a four-dimensional theory with Space-Time Supersymmetry (which is necessary for phenomenological reasons), as shown by Candelas, Horowitz, Strominger, Witten, we must compactify six of the ten dimensions on a so-called Calabi-Yau manifold. Another equivalent approach to do the same is the compactification of 6 dimensions into an  $N = 2$  Superconformal field theory with the central charge  $c = 9$ , as was shown by D. Gepner. Each of these two equivalent approaches has its own merits. In particular, Gepner's approach makes it possible to use exactly solvable  $N=2$  SCFT models and thus obtain an explicit solution of the considered model.

The subject of my talk is a new approach to the construction of Calabi-Yau orbifolds of Fermat type required for the compactification in Superstring theory. The idea of the approach is to use the connection of the CY orbifolds with a class of exactly solvable  $N=2$  SCFT models for explicitly constructing a complete set of fields in these orbifold models using the Spectral flow twist (Schwimmer and Seiberg) and the requirement of the mutual locality of the fields.

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**Classification de Session:** Afternoon chair: Paul Windey