

## R. Tatar: "New Aspects of Heterotic- F theory duality"

*Thursday, 31 July 2008 10:00 (30 minutes)*

The duality between the Heterotic and F-theory is a powerful tool in gaining more insights into F-theory description of low-energy chiral multiplets. Because chiral multiplets from bundles  $\wedge^2 V$  and  $\wedge^2 V^*$  as well as those from a bundle  $V$  are all involved in Yukawa couplings in Heterotic compactification, we need to translate descriptions of all those kinds of matter multiplets into F-theory language through the duality. We find that chiral matter multiplets in F-theory are global holomorphic sections of line bundles on what we call covering matter curves. The covering matter curves are formulated in Heterotic theory in association with normalization of spectral surface, while they are where M2-branes wrapped on a vanishing two-cycle propagate in F-theory.

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**Track Classification:** W2