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Algebraic geometric construction of Guffin-Sharpe-Witten model and Fan-Jarvis-Ruan-Witten theory

ABSTRACT: The Gromov-Witten theory motivates the construction of A-twisted topological string for Landau Ginzburg (LG) space. For affine LG space Fan-Jarvis-Ruan constructed the invariant analytically. For other LG space Guffin-Sharpe related the invariant to ordinary GW invariants for genus zero by path-integral argument. In this talk I give an algebro geometric construction of both Fan-Jarvis-Ruan-Witten and Guffin-Sharpe-Witten theories. The construction works for all genus and we prove GSW=GW in algebraic geometry. Our main technique is Kiem-Li cosection localization. It is a joint work with J. Li and W.-P. Li.