

Top Mass from Jet Distributions

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A new factorization theorem for the precision extraction of the top mass from top pair production far above threshold at the ILC is presented. The factorization theorem gives a precise relation between the measurement of properties of top jet distributions, such as thrust or hemisphere invariant mass, and the top mass. The observable is shown to be sensitive to a new class of top mass schemes called ‘top resonance’ schemes which can be converted to the well known $\overline{\text{MS}}$ top mass schemes. The factorization theorem sums large logarithms involving the center of mass energy, the top mass, and the top width via renormalization group equations in a sequence of effective field theories. NLL resummed results are presented.

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