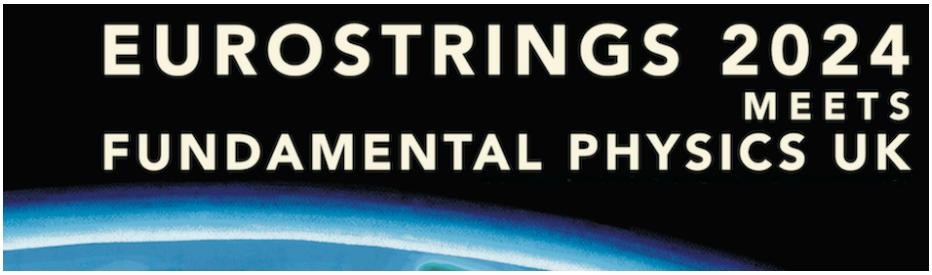


Contribution ID: **10** Type: **Talk in parallel session**

# Field theory expansions of string theory amplitudes

*Monday 2 September 2024 15:10 (20 minutes)*

Motivated by quantum field theory (QFT) considerations, we present new representations of the Euler-Beta function and tree-level string theory amplitudes using a new two-channel, local, crossing symmetric dispersion relation. Unlike standard series representations, the new ones are analytic everywhere except at the poles, sum over poles in all channels and include contact interactions, in the spirit of QFT. This enables us to consider mass-level truncation, which preserves all the features of the original amplitudes. By starting with such expansions for generalized Euler-Beta functions and demanding QFT like features, we single out the open superstring amplitude. We demonstrate the difficulty in deforming away from the string amplitude and show that a class of such deformations can be potentially interesting when there is level truncation. Our considerations also lead to new QFT-inspired, parametric representations of the Zeta function and $\pi$, which show fast convergence.

## Link to publication (if applicable)

http://arxiv.org/abs/2401.05733

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