

## Massive inflationary amplitudes: new representations and degenerate limits

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The particle model building of cosmological collider physics often involves boost-breaking bilinear mixing between a heavy particle and the nearly massless inflaton mode. In cosmological correlators, such a mixing is obtained by taking a folded limit of a generic tree graph, which is a special case of degenerate kinematics. In this work, we continue our exploration of massive inflationary amplitudes with a focus on degenerate kinematics. With a suitable change of variables, we derive new differential equations and full analytical solutions for generic tree graphs, making it trivial to take the folded limit and partial-energy limit at a vertex. Our result shows that folded tree graphs generally involve functions of smaller transcendental weights than their nondegenerate counterparts. In particular, the inflaton bispectrum with triple massive exchanges can be expressed in terms of a trivariate Kampé de Fériet function and simpler hypergeometric functions.

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