The performance of the resulting Jet Vertex Tagger (JVT) shows 1% fake rate from pile-up jets for a hard-scatter jet efficiency of 0.9.

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Jet substructure techniques are designed to improve the mass resolution of hadronically decaying boosted particles. Jet Trimming techniques reduce effective jet area rejecting low-momentum sub-jets arising from pile-up. They reduce the mass and energy dependence from pile-up. These techniques can be combined with tracking information by tagging pile-up sub-jets using tracks.

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The design luminosity of 5×10^{34} cm^{-2} s^{-1} planned for the High Luminosity (HL) LHC will imply an average pile-up of 140 interactions per bunch crossing. Techniques using tracking information and substructure information combined with the Jet Area subtraction can successfully cope with such harsh conditions. Simulation studies show that the dependence on pile-up of jet multiplicity and jet mass can be significantly reduced.