

# Measurements of Baryon-to-Meson Ratios in Jets in Au+Au and $p+p$ Collisions at $\sqrt{s_{NN}} = 200$ GeV by STAR

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1        Measurements at RHIC and the LHC show strongly enhanced baryon-to-  
2 meson yield ratios at intermediate transverse momenta ( $p_T$ ) in high-energy nu-  
3 clear collisions compared to  $p+p$  baseline. This enhancement is attributed to  
4 the following QGP effects: strong hydrodynamic flow and parton recombina-  
5 tion. Jet probes have been used extensively to gain insights into QGP prop-  
6 erties, with substantial modifications to jet yields and internal structures seen  
7 across multiple measurements. Despite apparent medium-induced changes to  
8 jet fragmentation patterns, LHC results indicate that in-jet particle production  
9 is significantly different from that of the QGP bulk. To explore this behavior  
10 at RHIC, we employ particle identification through time of flight and  $dE/dx$   
11 information alongside jet-track correlations to measure in-jet particle produc-  
12 tion for  $p_T < 5.0$  GeV/ $c$ . We present the first in-cone baryon-to-meson yield  
13 ratios associated with fully reconstructed jets from 200 GeV Au+Au and  $p+p$   
14 collisions using the STAR detector at RHIC.