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Precision Measurement of $\mathcal{B}(B^0 \rightarrow D^{*-} \pi^+ \pi^- \pi^+)$ at BABAR

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Using a sample of $(470.9 \pm 2.8) \times 10^6$ B meson pairs, we measure the decay branching fraction $\mathcal{B}(B^0 \rightarrow D^{*-} \pi^+ \pi^- \pi^+) = (7.26 \pm 0.11 \pm 0.11) \cdot 10^{-3}$ where the first uncertainty is statistical and the second uncertainty is systematic. The measurement is 2.4 times more precise than the current world average value. This branching fraction includes singly-charmed B^0 decays only and is obtained by removing the dominant doubly-charmed B^0 decay contribution from the contaminated branching fraction of $(7.37 \pm 0.11 \pm 0.31) \cdot 10^{-3}$.

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