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Model Independent Constraints on $R(J/\psi)$

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LHCb has recently presented a measurement of $R(J/\psi) = \mathcal{BR}(B_c^+ \to J/\Psi\tau^+\bar{\nu}_\tau)/\mathcal{BR}(B_c^+ \to J/\Psi\mu^+\bar{\nu}_\mu)$. The value, $R(J/\psi) = 0.71 \pm 0.17 \pm 0.18$ is in mild tension with the range of model predictions 0.25-0.28. The model transition form factors dominate the systematic uncertainty of the measurement and limit the predictions to a range of values. To improve this situation, we have undertaken to compute model-independent constraints on the transitions form factors via dispersive methods. This allow for rigorous error estimates to be assigned and $R(J/\psi)$ to be computed.

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