CHARMED MESONS

\((C = \pm 1)\)

\(D^+ = c\bar{d}, \ D^0 = c\bar{u}, \ \bar{D}^0 = \bar{u}c, \ D^- = \bar{c}d, \ \) similarly for \(D^*\)’s

\(D^\pm\)

\[ I(J^P) = \frac{1}{2}(0^-) \]

Mass \(m = 1869.3 \pm 0.5 \) MeV \( (S = 1.1) \)
Mean life \(\tau = (1.051 \pm 0.013) \times 10^{-12} \) s
\(c\tau = 315 \) \(\mu\)m

c-quark decays
\[ \Gamma(c \rightarrow \ell^+ \text{anything})/\Gamma(c \rightarrow \text{anything}) = 0.095 \pm 0.009 \] \([nm]\)

\(CP\)-violation decay-rate asymmetries
\[ A_{CP}(K^+K^-\pi^\pm) = -0.017 \pm 0.027 \]
\[ A_{CP}(K^\pm K^*0) = -0.02 \pm 0.05 \]
\[ A_{CP}(\phi\pi^\pm) = -0.014 \pm 0.033 \]
\[ A_{CP}(\pi^+\pi^-\pi^\pm) = -0.02 \pm 0.04 \]

\(D^+ \rightarrow \bar{K}^*(892)^0\ell^+\nu_\ell\) form factors
\[ r_\nu = 1.82 \pm 0.09 \]
\[ r_2 = 0.78 \pm 0.07 \]
\[ r_3 = 0.0 \pm 0.4 \]
\[ \Gamma_L/\Gamma_T = 1.14 \pm 0.08 \]
\[ \Gamma_+/\Gamma_- = 0.21 \pm 0.04 \] \((S = 1.3)\)

\(D^-\) modes are charge conjugates of the modes below.

\[ \frac{\Gamma_i}{\Gamma} \]

\[ \text{Fraction} \]

\[ \text{Scale factor/} \]

\[ \text{Confidence level} \]

\[ \text{(MeV/c)} \]

<table>
<thead>
<tr>
<th>(D^+) DECAY MODES</th>
<th>Inclusive modes</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Fraction ((\Gamma_i/\Gamma))</td>
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<tr>
<td>e(^+) anything</td>
<td>(17.2 \pm 1.9 ) %</td>
</tr>
<tr>
<td>K(^-) anything</td>
<td>(24.2 \pm 2.8 ) %</td>
</tr>
<tr>
<td>(\bar{K}^0) anything + K(^0) anything</td>
<td>(59 \pm 7 ) %</td>
</tr>
<tr>
<td>K(^+) anything</td>
<td>( 5.8 \pm 1.4 ) %</td>
</tr>
<tr>
<td>(\eta) anything</td>
<td>([nn] &lt; 13) %</td>
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