

# Leptonic and semi-leptonic decays of charmed mesons at BESIII

Hailong Ma<sup>a</sup>

(on behalf of BESIII collaboration)

<sup>a</sup> *Institute of High Energy of Physics, CAS, China*

The BESIII experiment at the BEPCII collider accumulated 2.93 and 3.19 fb<sup>-1</sup> e<sup>+</sup>e<sup>-</sup> collision samples at the center-of-mass energies of 3.773 and 4.178 GeV, respectively. They are all the world's largest ones to date. Using these data samples, we have studied the purely leptonic decays  $D_{(s)}^+ \rightarrow \ell^+ \nu_\ell$ , and the semi-leptonic decays of  $D^0 \rightarrow K(\pi)^- e^+ \nu_e$ ,  $K(\pi)^- \mu^+ \nu_\mu$ ,  $D^+ \rightarrow \bar{K}^0(\pi^0) e^+ \nu_e$ ,  $\bar{K}^0(\pi^0) \mu^+ \nu_\mu$  and  $D_s^+ \rightarrow K^{(*)0} e^+ \nu_e$ . We will report the improved measurements of the branching fractions of these decays and the CKM matrix elements  $|V_{cs(d)}|$ , the  $D_{(s)}^+$  decay constants, the form factors of  $D_{(s)}^+$  semi-leptonic decays. These results are important to calibrate the LQCD calculations of  $D_{(s)}^+$  decay constants and form factors and to test the CKM matrix unitarity.