

Semileptonic B decays at the junction of experiment and theory

Report of Contributions

Contribution ID: 5

Type: **not specified**

Higher power contributions in inclusive semileptonic B decays

Thursday, 12 June 2025 14:00 (40 minutes)

Primary author: FINAURI, Gael (TUM)

Presenter: FINAURI, Gael (TUM)

Session Classification: Talks

Contribution ID: 6

Type: **not specified**

Inclusive semi-leptonic decays of heavy mesons on the lattice: From D to B

Friday, 13 June 2025 11:20 (40 minutes)

Primary author: SMECCA, Antonio (Swansea University)

Presenter: SMECCA, Antonio (Swansea University)

Session Classification: Talks

Contribution ID: 7

Type: **not specified**

Measurement of the differential distributions of $B_s^0 \rightarrow D_s^{*-} \mu^+ \nu_\mu$ decay with the LHCb detector

Friday, 13 June 2025 10:10 (40 minutes)

This analysis aims to conduct a comprehensive study of the decay kinematics of the semileptonic decay signal, with $D_s^{*-} \rightarrow D_s^- \gamma$ and $D_s^- \rightarrow K^+ K^- \pi^-$, using data collected by the LHCb experiment in Run 2. A first measurement of the form factors describing the B_s^0 meson semileptonic decay is provided, performing a four-dimensional binned fit in the space given by the variables describing the decay kinematics, namely q^2 , $\cos \theta_\ell$, $\cos \theta_d$ and χ . Taking into account the detector acceptance, as well as the reconstruction efficiencies and the resolution effects, the full differential distribution is obtained; then, a fit to this distribution is performed using different parameterisations for the $B_s^0 \rightarrow D_s^*$ transition form factors. Furthermore, the unfolded distributions are compared with the theoretical predictions and the Belle-II experiment results. Finally, a model-independent approach is tested and its compatibility with the model-dependent results is studied.

Primary authors: MANGANELLA, Federico (Istituto Nazionale di Fisica Nucleare); ROTONDO, Marcello (Istituto Nazionale di Fisica Nucleare); DE SIMONE, Patrizia (Istituto Nazionale di Fisica Nucleare)

Presenter: MANGANELLA, Federico (Istituto Nazionale di Fisica Nucleare)

Session Classification: Talks

Contribution ID: 8

Type: **not specified**

New Physics in inclusive semileptonic B decays

Thursday, 12 June 2025 14:40 (40 minutes)

Primary authors: CARVUNIS, Alexandre Jean Nicolas (Istituto Nazionale di Fisica Nucleare); FIN-AURI, Gael (TUM); JUNG, Martin (Istituto Nazionale di Fisica Nucleare); GAMBINO, Paolo (Istituto Nazionale di Fisica Nucleare)

Presenter: CARVUNIS, Alexandre Jean Nicolas (Istituto Nazionale di Fisica Nucleare)

Session Classification: Talks

Contribution ID: 9

Type: **not specified**

Semileptonic B decays – results and plans at Belle II

Thursday, 12 June 2025 17:10 (50 minutes)

Primary author: SCHWANDA, Christoph (Institute of High Energy Physics, Austrian Academy of Sciences)

Presenter: SCHWANDA, Christoph (Institute of High Energy Physics, Austrian Academy of Sciences)

Session Classification: Talks

Contribution ID: **10**

Type: **not specified**

What we can learn from $B \rightarrow D^* \ell \nu$ decays without V_{cb}

Friday, 13 June 2025 09:30 (40 minutes)

Primary author: SIMULA, Silvano (Istituto Nazionale di Fisica Nucleare)

Presenter: SIMULA, Silvano (Istituto Nazionale di Fisica Nucleare)

Session Classification: Talks

Contribution ID: 11

Type: **not specified**

Measurement of b-fragmentation fraction with semileptonic decays with LHCb Run3 data

Friday, 13 June 2025 12:00 (40 minutes)

Primary author: MINUCCI, Elisa

Presenter: MINUCCI, Elisa

Session Classification: Talks

Contribution ID: 14

Type: **not specified**

Inclusive $B \rightarrow X_u \ell \nu$: Towards NNLO Extractions of V_{ub}

Thursday, 12 June 2025 15:20 (40 minutes)

In this talk, I will present a short overview of inclusive $b \rightarrow u$ semileptonic decays. I will introduce the GGOU approach, one of the two most active frameworks for V_{ub} extractions in recent years. And finally, I will outline our ongoing work on the extraction of NNLO corrections to the fully differential decay distribution.

Primary author: CAPDEVILA, Bernat (Universitat de Barcelona, Institut de Ciències del Cosmos)

Presenter: CAPDEVILA, Bernat (Universitat de Barcelona, Institut de Ciències del Cosmos)

Session Classification: Talks

Contribution ID: **16**

Type: **not specified**

Semileptonic B to D^*/D^{} l ν decays at Belle II**

Thursday, 12 June 2025 16:30 (40 minutes)

In this talk, we will discuss the semileptonic $B \rightarrow D l \nu$ and $B \rightarrow D^* l \nu$ measurements at Belle II, and explore additional observables that may offer useful insights beyond the standard ones.

Primary author: PRIM, Markus

Presenter: PRIM, Markus

Session Classification: Talks