



Contribution ID: 2080 Contribution code: TUPM071

Type: **Poster Presentation**

## **Muon background minimisation using the second achromat of the NA62-BD experiment**

*Tuesday, 9 May 2023 16:30 (2 hours)*

The K12 beam line and NA62 experiment in the North Area at CERN in beam dump mode exploits the interactions of 400 GeV protons with a movable dump-collimator, the so-called XTAX. Such interactions are theorised to generate potential light dark matter candidates such as the axion. Any rare process search requires precise knowledge and experimental reduction of the predominant muon background. A previous examination has been performed successfully, involving tuning the magnetic fields of the first achromat in K12. This contribution aims to explore further improvements using similar methods on the second achromat in the same K12 beam line, using BDSIM simulation software.

### **Funding Agency**

### **Footnotes**

### **I have read and accept the Privacy Policy Statement**

Yes

**Primary author:** MURPHY, Robert (European Organization for Nuclear Research)

**Co-authors:** BANERJEE, Dipanwita (European Organization for Nuclear Research); BARATTO ROLDAN, Anna (European Organization for Nuclear Research); BERNHARD, Johannes (European Organization for Nuclear Research); BOOGERT, Stewart (John Adams Institute); BRUGGER, Markus (European Organization for Nuclear Research); CHARITONIDIS, Nikolaos (European Organization for Nuclear Research); D'ALESSANDRO, Gian Luigi (European Organization for Nuclear Research); DENIAUD, Marin (John Adams Institute); DYKS, Luke (Oxford University); GATIGNON, Laurent (Lancaster University); GIBSON, Stephen (Royal Holloway, University of London); METZGER, Fabian (European Organization for Nuclear Research); MUSSOLINI, Carlo Alberto (Oxford University); NEVAY, Laurence (European Organization for Nuclear Research); PAROZZI, Elisabetta (Universita Milano Bicocca); RAE, Bastien (European Organization for Nuclear Research); SCHUH-ERHARD, Silvia (European Organization for Nuclear Research); SHIELDS, William (Royal Holloway, University of London); SIMON, Pascal (GSI Helmholtzzentrum für Schwerionenforschung GmbH); STERGIOU, Vasiliki (European Organization for Nuclear Research); STUMMER, Florian (European Organization for Nuclear Research); VAN DIJK, Maarten (European Organization for Nuclear Research)

**Presenter:** MURPHY, Robert (European Organization for Nuclear Research)

**Session Classification:** Tuesday Poster Session

**Track Classification:** MC4: Hadron Accelerators: MC4.A21: Secondary Beams