**10 most relevant publications**

***ATLAS Collaboration papers:*** Due to the large nature of experimental collaborations in particle physics, each publication relies on the results of a very large number of individual researchers and technicians. For this reason, the author list of each of the public documents by the ATLAS experiment includes all members of the collaboration, in alphabetical order. My full bibliometric information (Inspire-HEP) can be found [at this link](https://inspirehep.net/author/profile/C.Doglioni.1).According to the [*Inspire* metrics](https://inspirehep.net/help/citation-metrics), my h-hep index is 150, with 107.6 average citations per published paper, overall number of published citations 99345. The following list of ATLAS papers has been selected based on their relevance to this research proposal, and my contribution is described below.

**1) (2018) “Search for low-mass dijet resonances using trigger-level jets with the ATLAS detector in pp collisions at sqrt(s)=13 TeV”.** G. Aad *et al.* [ATLAS Collaboration]. [Phys. Rev. Lett. 121, 081801 (2018)](https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.121.081801), [arXiv:1804.03496](https://arxiv.org/abs/1804.03496). *This paper describes the first search using the Trigger Level Analysis technique in ATLAS with the full 2016 LHC dataset, and the world-leading constraints on Dark Matter mediator particles decaying into dijets. I was one of three editors of this paper and one of the main analysers, together with the Lund postdoctoral researcher who is now the analysis contact for the full Run-2 search.* ***Journal impact factor (2018): 9.227;*** [***citations***](https://inspirehep.net/record/1667040)***: 61.***

**2) (2018) [Dijet+ISR] I was one of three editors of this paper and my student was one of the main analyzers.**

**3) (2017) “Performance of the ATLAS Trigger System in 2015”.** G. Aad *et al.* [ATLAS Collaboration]. Eur. Phys. J. C 77 (2017) 317, [arXiv:1611.09661](https://arxiv.org/abs/1611.09661). *The performance of the ATLAS trigger system is described in this paper, including the performance and commissioning of the Trigger Level Analysis. I made the relevant plots for this paper together with a student.* ***Journal impact factor: 4.843;*** [***citations***](https://inspirehep.net/record/1500696)***: 452.***

**4) (2016) “Search for new phenomena in the dijet mass and angular distribution from pp** **collisions at sqrt(s) = 13 TeV with the ATLAS detector”.** G. Aad *et al.* [ATLAS Collaboration]. Phys. Let. B754 (2016) 302-322 [arXiv:1512.01530](https://arxiv.org/abs/1512.01530)*is the first search publication for the LHC, for the 13 TeV run, setting the strongest constraint at the time on high-mass dijet resonances. I have contributed to many aspects of the analysis, especially on the performance of the highest energy jets used for this search, and supervised the Lund PhD student who was the contact person for this analysis.****Journal impact factor: 4.162;*** [***citations***](https://inspirehep.net/record/1408292)***: 192;***

**5) (2013) “Jet energy measurement with the ATLAS detector in proton-proton collisions at sqrt(s)=7 TeV”.** G. Aad *et al.* [ATLAS Collaboration]. Eur. Phys. J. C **73**, 2304 (2013). *This paper documents the calibration and performance of hadronic jets in the ATLAS detector for the full 2010 LHC dataset, and established many of the techniques that have been used since. This was my thesis topic, and I have been the leading author or the analysis and public notes that appear in sections 8-9.* ***Journal impact factor: 4.843;*** [***citations***](https://inspirehep.net/record/1082939)***: 1046.***

***Dark Matter Forum / Working Group papers:*** The Dark Matter Working Group (DMWG, [link to mandate](https://lpcc.web.cern.ch/content/lhc-dm-wg-wg-dark-matter-searches-lhc)) regularly publishes the results of the work of the LHC Dark Matter community in terms of search targets and presentation of results. As one of the working group leaders from 2014-2018 I have been among the 2-5 editors for the four publications, published as a single issue on Physics of the Dark Universe.

**6) (2015) “Dark Matter Benchmark Models for Early LHC Run-2 Searches: Report of the ATLAS/CMS Dark Matter Forum”.** A. Abercrombie et al. Phys.Dark Univ. 26 (2019) 100371

[arXiv:1507.00966](https://arxiv.org/abs/1507.00966)**.** *This document is the final report of the ATLAS-CMS Dark Matter Forum, a forum organized by the ATLAS and CMS collaborations with the participation of theory. It contains DM signal benchmarks early LHC Run-2 searches and studies of their parameter space, and a repository of generator implementation as supplementary material. I have been one of the five organizers and main editors of this paper.* ***Journal impact factor: 5.660;*** [***citations***](https://inspirehep.net/record/1381178)***: 380;*** **7) (2016) Recommendations on presenting LHC searches for missing transverse energy signals using simplified s-channel models of dark matter.** A. Boveia et al.Phys.Dark Univ. (2019) 100365

[**arXiv:1603.04156**](https://arxiv.org/abs/1603.04156) **[hep-ex].** *This document contains the DMWG recommendations used by all DM searches for these models, on how to show results of LHC searches together with non-collider searches using the models from Ref. 6), followed by a companion document on how to convey the complementarity of visible/invisible mediator LHC searches. I am the contact editor and author of this document.* ***Journal impact factor: 5.660;*** [***citations***](https://inspirehep.net/record/1427412)***: 251.***

***Invited review papers and summaries:*** As an internationally recognised expert in the field, I have been invited to write review articles on the subject area of this proposal. I have also contributed to the European Strategy update, which defines the next 10 years of Europe-wide and international research in HEP, as one of the scientific secretaries of both the Dark Matter and Beyond the Standard Model Physics Planning Groups with work included in the summary Physics Briefing Book submitted to the European Strategy Group ([arXiv:1910.11775](https://arxiv.org/abs/1910.11775)).

**8) (2017) “Search for dark matter at colliders”.** Oliver Buchmueller, Caterina Doglioni and Lian-Tao Wang. Published as a Nature Physics Progress Article, [Nature Physics **13**, 217–223 (2017)](https://www.nature.com/articles/nphys4054), <arxiv:1912.12739>. *This article reviews the state of dark matter theory and searches at the Large Hadron Collider, concentrating on the weakly interactive massive particle (WIMP) scenario. I am one of the three authors who have been invited by the journal for a special issue of Nature Physics and Nature Astronomy, focused on dark matter.*

***Journal impact factor: 20.113, citations: 12,*** [***bibliometric information***](https://www.nature.com/articles/nphys4054/metrics)

**9) (2018) “Dark Matter Searches at colliders”.** Antonio Boveia, Caterina Doglioni. [Ann.Rev.Nucl.Part.Sci. 68 (2018) 429-459](https://www.annualreviews.org/doi/pdf/10.1146/annurev-nucl-101917-021008), [arXiv:1810.12238](http://arxiv.org/abs/arXiv:1810.12238). *This is an invited review of dark matter searches at colliders. This is a much broader and longer review than Ref. 8) above, targeting a broad range of audiences (from PhD students to experts in the field), describing the state of the art of collider searches for dark matter, their connections to other experiments and an outlook for the future.* ***Journal impact factor: 7.7,*** [***citations***](https://inspirehep.net/record/1700750)***: 29.***

**High Energy Physics (HEP) Software Foundation whitepaper:** As a member of the HEP Software Foundation, I authored its initial whitepaper and its supporting documentation as input to the strategy for trigger and reconstruction for high energy physics for the next decade. Since 2018, I have been selected as convenor of the Trigger and Reconstruction Working Group of the HEP Software Foundation.

**10) (2017) “A roadmap for HEP software and computing R&D for the 2020s”**,A. Alves Jr et al. [HEP Software Foundation]. Comput. Softw. Big Sci. 3 (2019) no.1, 7, [arXiv:1712.06982](https://arxiv.org/abs/1712.06982)**.** *This whitepaper delineates the R&D activities needed to prepare for the upgrades of the experimental programme of HEP in the coming decades. I have contributed to the main document and chapter on trigger and event reconstruction in terms of real-time analysis. This whitepaper has been the stepping stone for the NSF-funded IRIS-HEP Institute for Research and Innovation in Software in High Energy Physics (*[*http://iris-hep.org)*](http://iris-hep.org))*.* ***Journal impact factor: N/A (new),*** [***citations***](https://inspirehep.net/record/1644100)***: 46***

**Invitations to seminars, lectures and conferences**

2012-: Teacher and LU contact at the [International Hadron Collider Summer School](http://hasco.uni-goettingen.de/), Goettingen

BSM lectures at the CERN/Fermilab school

**Prizes**