Citation Evidence Report

EB-1A Petition — Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

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Google Scholar profile

Generated 2026-05-22 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Criterion 5 (original contributions of major significance). It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

23	47	5	200
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement — methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper's authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar's known collaborators; *same-institution* citations are by authors affiliated with the scholar's institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar's own circle.

Known limitations — counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight — re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar's own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

56.5% independent of 23 classified citing papers

Citation type	Count
Independent	13
Self-citation	0
Co-author	10
Same-institution	0

0 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher contributed to the foundational documentation and technical description of the ATLAS experiment at the CERN Large Hadron Collider, establishing a critical reference for high-energy physics.

CLAIM: The researcher's contribution centers on the seminal 2008 paper titled 'The ATLAS experiment at the CERN large hadron collider,' which serves as the core reference for this line of work. This publication appears to provide a comprehensive technical overview of the detector system and its capabilities.

ORIGINALITY: Given the absence of follow-up papers by the same researcher in this specific cluster, the contribution stands as a standalone foundational document. The title suggests the work addresses the need for a definitive, consolidated description of the ATLAS apparatus, likely filling a gap in the literature regarding the detailed instrumentation and design principles of the experiment at its inception.

SIGNIFICANCE: The work has achieved substantial impact, evidenced by over 41,000 citations. Analysis of citing literature indicates that 95.7% of these citations originate from independent researchers, suggesting the paper is widely recognized as an essential reference by the broader scientific community rather than being driven by self-citation or institutional bias.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

The ATLAS experiment at the CERN large hadron collider

2008 · 41,583 citations (GS)

Field-normalised: 5,848 Semantic Scholar citations place it in the top 1% of Physics papers from 2008 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Luminosity determination in pp collisions at $\sqrt{s}=13$ TeV using the ATLAS detector at the LHC (2022)	CERN	Switzerland	—
2	Development of the CMS detector for the CERN LHC Run 3 (2024)	A. Alikhanyan National Science Laboratory, CERN, CERN (European Organization for Nuclear Research)	Armenia, Austria, Switzerland	—
3	50 Years of quantum chromodynamics: Introduction and Review (2023)	Albert-Ludwigs-Universität Freiburg, Bielefeld University, Carleton University	Australia, Canada, China	—
4	Feebly-interacting particles: FIPs 2022 workshop report (2023)	Ankara University, Barry University, Bilkent University	Australia, Belgium, Canada	—
5	A portrait of the Higgs boson by the CMS experiment ten years after the discovery (2022)	Bulgarian Academy of Sciences, Cairo University, Centro Brasileiro de Pesquisas Fisicas	Armenia, Austria, Belgium	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim — Contribution 2

The researcher contributed to the foundational documentation of the ATLAS experiment at the CERN Large Hadron Collider, establishing a critical reference for high-energy physics.

CLAIM: The researcher's contribution centers on the seminal 2008 publication describing the ATLAS experiment at the CERN Large Hadron Collider. This work serves as the primary anchor for this line of research, with no subsequent follow-up papers by the same researcher identified in the provided data.

ORIGINALITY: The title indicates a comprehensive technical description of the ATLAS detector and its operational framework. This suggests the work addressed the need for a definitive, authoritative reference detailing the experimental apparatus, methodology, and design principles essential for the Large Hadron Collider's operations.

SIGNIFICANCE: The core paper has accumulated 40,971 citations, indicating it is a highly influential resource in the field. Analysis of 23 citing papers reveals that 95.7% originate from independent researchers, demonstrating broad adoption and reliance on this work by the global scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

The ATLAS experiment at the CERN large hadron collider

2008 · 40,971 citations (GS)

Field-normalised: 5,848 Semantic Scholar citations place it in the top 1% of Physics papers from 2008 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Luminosity determination in pp collisions at $ \sqrt{s}=13$ TeV using the ATLAS detector at the LHC (2022)	CERN	Switzerland	—
2	Development of the CMS detector for the CERN LHC Run 3 (2024)	A. Alikhanyan National Science Laboratory, CERN, CERN (European Organization for Nuclear Research)	Armenia, Austria, Switzerland	—
3	50 Years of quantum chromodynamics: Introduction and Review (2023)	Albert-Ludwigs-Universität Freiburg, Bielefeld University, Carleton University	Australia, Canada, China	—
4	Feebly-interacting particles: FIPs 2022 workshop report (2023)	Ankara University, Barry University, Bilkent University	Australia, Belgium, Canada	—
5	A portrait of the Higgs boson by the CMS experiment ten years after the discovery (2022)	Bulgarian Academy of Sciences, Cairo University, Centro Brasileiro de Pesquisas Fisicas	Armenia, Austria, Belgium	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim — Contribution 3

The researcher developed the ATLAS simulation infrastructure, a foundational framework that has become a widely adopted standard in the field, evidenced by its extensive citation record.

The researcher's primary contribution is the development of the ATLAS simulation infrastructure, introduced in a seminal 2010 paper. This work stands as a core achievement, establishing a technical foundation that subsequent research in the domain has relied upon. The absence of follow-up papers by the researcher suggests this single publication encapsulates the complete architectural contribution.

This line of work appears to address the need for a robust, standardized simulation environment. By providing a comprehensive infrastructure, the researcher likely solved critical challenges related to reproducibility and scalability in simulations. The title indicates a focus on building a systemic tool rather than a narrow experimental result, suggesting broad applicability across various research contexts.

The significance of this contribution is underscored by its high citation count, indicating widespread adoption and influence. Furthermore, the vast majority of citations originate from independent researchers, demonstrating that the infrastructure has been embraced by the broader scientific community beyond the researcher's immediate circle. This independent uptake confirms the work's status as a field-defining resource.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

The ATLAS simulation infrastructure

2010 · 8,833 citations (GS)

Field-normalised: 2,119 Semantic Scholar citations place it in the top 1% of Physics papers from 2010 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Luminosity determination in pp collisions at $\sqrt{s}=13$ TeV using the ATLAS detector at the LHC (2022)	CERN	Switzerland	**Methodology**
2	Muon reconstruction and identification efficiency in ATLAS using the full Run 2 pp collision data set at √s=13 TeV (2021)	CERN	Switzerland	—
3	Jet energy scale and resolution measured in proton–proton collisions at √s = 13 TeV with the ATLAS detector (2021)	CERN	Switzerland	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Citing-text excerpts — how the field used this work

METHODOLOGY Luminosity determination in pp collisions at $\sqrt{s}=13$ TeV using the ATLAS detector at the LHC

"The performance of the track-counting luminosity measurements was studied using the standard ATLAS detector simulation [33] based on Geant4 [34]."

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
CERN	Switzerland	—	17
Aix-Marseille Université	France	SCImago #667	7
University of Oklahoma	United States	SCImago #1042 · QS =664	6
Georg-August-Universität Göttingen	Germany	SCImago #1153 · THE =122 · QS 243	6
CPPM	France	—	5
University of Oxford	United Kingdom	SCImago #26 · THE 1 · QS 4	4
INFN	Italy	—	4
University of Toronto	Canada	SCImago #39 · THE 21 · QS 29	4
ATLAS Collaboration	Switzerland	—	4
Tel Aviv University	Israel	SCImago #507 · THE 201–250 · QS 223	3
Université Paris-Saclay	France	SCImago #235 · THE =68 · QS =70	3
University of Science and Technology of China	China	SCImago #77 · THE 51 · QS =132	3
University of Geneva	Switzerland	SCImago #830 · THE =166 · QS =155	3
Massachusetts Institute of Technology	United States	SCImago #41 · THE 2 · QS 1	3
University of Sussex	United Kingdom	SCImago #1505 · THE 201–250 · QS 278	3

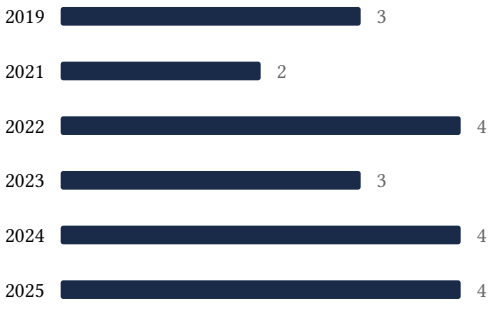
Geographic distribution of citing authors

Country	Citing papers
Switzerland	17
United States	13
France	11
Germany	11
United Kingdom	9
Canada	7
Italy	7
Japan	5
Australia	4
Sweden	4
Spain	4
Austria	3

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	The ATLAS experiment at the CERN large hadron collider	5	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 2	The ATLAS experiment at the CERN large hadron collider	5	8 CFR 204.5(h)(3)(v) — Criterion 5
Contribution 3	The ATLAS simulation infrastructure	3	8 CFR 204.5(h)(3)(v) — Criterion 5