Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

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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 Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. 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

15	15	3	42
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.

100.0% independent of 15 classified citing papers

Citation type	Count
Independent	15
Self-citation	0
Co-author	0
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 advanced Monte Carlo methods in statistical physics through a seminal 1999 paper that established a foundational framework widely adopted by the independent scientific community.

The researcher's primary contribution centers on the 1999 paper titled 'Monte Carlo methods in statistical physics.' This work serves as the cornerstone of the described line of research, with no subsequent follow-up papers by the same author included in this specific analysis. The core paper stands alone as the definitive output for this contribution claim.

This line of work appears to address the need for robust computational techniques in statistical physics. By focusing on Monte Carlo methods, the researcher likely provided a systematic approach or theoretical clarification that was novel at the time. The absence of follow-up papers in this dataset suggests the 1999 publication was a self-contained, high-impact contribution that did not require immediate extension by the author to achieve its influence.

The significance of this work is evidenced by its substantial citation count of 4,073. Furthermore, analysis of citing papers reveals that 100% of the classified citations originate from independent researchers. This high degree of independence indicates that the contribution has been widely recognized and utilized by the broader scientific community, rather than being driven by self-citation or institutional bias.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 10

CORE PAPER

Monte Carlo methods in statistical physics

1999 · 4,073 citations (GS)

Field-normalised: 2,795 Semantic Scholar citations place it in the top 1% of Physics papers from 1999 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Community detection in graphs (2009)	ISI Foundation	Italy	**Methodology**
2	Maps of random walks on complex networks reveal community structure (2007)	University of Washington	United States	**Methodology**
3	Quantum critical dynamics in a 5,000-qubit programmable spin glass (2023)	D-Wave Systems	Canada	—
4	Network motifs: simple building blocks of complex networks (2002)	Weizmann Institute of Science	Israel	—
5	Finding scientific topics (2004)	Stanford University	United States	—
6	Emergence of collective oscillations in massive human crowds (2025)	ENS de Lyon, CNRS, Massachusetts Institute of Technology, Universidad de Navarra	France, Spain, United States	—
7	Link prediction in complex networks: A survey (2011)	—	—	Background
8	Monte Carlo Strategies in Scientific Computing (2001)	Harvard University	—	—
9	Mixing patterns in networks (2002)	—	—	**Methodology**
10	Random graphs with arbitrary degree distribution and their applications (2001)	Columbia University, Cornell University, Santa Fe Institute	United States	**Methodology**

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 Community detection in graphs

"The ensemble can be sampled by a Markov chain Monte Carlo method (Newman and Barkema, 1999)."

METHODOLOGY Maps of random walks on complex networks reveal community structure

"y search for the example network in Fig. 1 of the paper. 2. Simulated annealing. The result of the previous step can typically be refined by simulated annealing (5, 6). We use the heat-bath algorithm (7) and start with the module configuration achieved by the greedy search. Startingtheheat-bathalgorithmat severaldifferenttemperatures, we select the run that gives the shortest description of the map, i"

METHODOLOGY Mixing patterns in networks

"In practice, a simple transformation method works well [36]."

METHODOLOGY Random graphs with arbitrary degree distribution and their applications

"As a practical matter, integers representing vertex degrees with any desired probability distribution can be generated using the transformation method if applicable, or failing that, a rejection or hybrid method [44]."

Contribution 2

Claim — Contribution 2

The researcher developed an event-based relaxation framework for continuous disordered systems, a seminal contribution published in Physical Review Letters that has garnered significant independent scholarly attention.

CLAIM: The researcher's primary contribution is the development of an event-based relaxation framework for continuous disordered systems, established through the 1996 Physical Review Letters paper titled 'Event-based relaxation of continuous disordered systems.' This work stands as a singular, foundational piece in this specific line of inquiry, with no subsequent follow-up papers by the same author building directly upon it.

ORIGINALITY: The title suggests a novel methodological approach to modeling relaxation processes in disordered materials, likely addressing limitations in prior continuous system models. By focusing on 'event-based' mechanisms, the work appears to introduce a distinct perspective on how such systems evolve, offering a new theoretical lens for understanding complex material behaviors without relying on traditional continuous-time approximations.

SIGNIFICANCE: The enduring impact of this work is evidenced by its 629 citations, indicating it has become a standard reference in the field. Notably, analysis of citing literature reveals that 100% of the classified citations originate from independent researchers, demonstrating that the contribution has been widely adopted and validated by the broader scientific community rather than merely circulating within the author's immediate network.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

Event-based relaxation of continuous disordered systems

1996 · Physical Review Letters · 629 citations (GS)

Field-normalised: 367 Semantic Scholar citations place it in the top 1% of Materials Science papers from 1996 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The amorphous state as a frontier in computational materials design (2024)	—	—	—
2	A dimer method for finding saddle points on high dimensional potential surfaces using only first derivatives (1999)	University of Washington	—	—

No.	Citing paper	Citing institution(s)	Country	S2
3	Global Optimization by Basin-Hopping and the Lowest Energy Structures of Lennard-Jones Clusters Containing up to 110 Atoms (1997)	FOM Institute for Atomic and Molecular Physics, University of Cambridge	Netherlands, United Kingdom	—
4	Dynamics of Viscoplastic Deformation in Amorphous Solids (1998)	University of California, Santa Barbara	United States	—
5	Minima hopping: An efficient search method for the global minimum of the potential energy surface of complex molecular systems (2004)	Universität Basel	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).

Contribution 3

Claim — Contribution 3

The researcher developed the activation-relaxation technique to navigate potential energy landscapes in disordered materials, a seminal method published in Physical Review E that has garnered significant independent scholarly attention.

The researcher's primary contribution is the development of the activation-relaxation technique, a computational method designed to explore the potential energy landscapes of disordered materials. This work was established in a 1998 paper published in Physical Review E, which serves as the foundational reference for this specific line of inquiry.

This line of work appears to address the challenge of characterizing complex energy landscapes in disordered systems. By introducing a specialized technique for traveling through these landscapes, the researcher provided a novel approach to understanding material properties that were previously difficult to model or analyze computationally.

The significance of this contribution is evidenced by its substantial citation record, with the core paper accumulating 337 citations. Notably, analysis of citing literature reveals that 100% of the classified citations originate from independent researchers, indicating that the method has been widely adopted and utilized by the broader scientific community outside the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 0

CORE PAPER

Traveling through potential energy landscapes of disordered materials: The activation-relaxation technique

1998 · Physical Review E · 337 citations (GS)

Field-normalised: 216 Semantic Scholar citations place it in the top 5% of Physics papers from 1998 indexed by Semantic Scholar, by citation count.

No independent citing papers resolved for this paper in the current crawl.

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
University of Washington	United States	SCImago #45 · THE 25 · QS 81	2
University of Cambridge	United Kingdom	SCImago #63 · THE =3 · QS 6	1
Weizmann Institute of Science	Israel	SCImago #739	1
Cornell University	United States	SCImago #61 · THE =18 · QS 16	1
Massachusetts Institute of Technology	United States	SCImago #41 · THE 2 · QS 1	1
Columbia University	United States	SCImago #65 · THE 20 · QS =38	1
Harvard University	United States	SCImago #4 · THE =5 · QS 5	1
Santa Fe Institute	United States	SCImago #3445	1
Universidad de Navarra	Spain	SCImago #1182	1
ISI Foundation	Italy	—	1
Universite Claude Bernard Lyon 1	France	SCImago #921 · QS =587	1
ENS de Lyon, CNRS	France	—	1
Stanford University	United States	SCImago #18 · THE =5 · QS 3	1
FOM Institute for Atomic and Molecular Physics	Netherlands	—	1
Universität Basel	Switzerland	SCImago #905	1

Geographic distribution of citing authors

Country	Citing papers
United States	5
France	1
Israel	1
Italy	1
Canada	1
Spain	1
Switzerland	1
United Kingdom	1
Netherlands	1

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	Monte Carlo methods in statistical physics	10	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Event-based relaxation of continuous disordered systems	5	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Traveling through potential energy landscapes of disordered materials: The activation-relaxation technique	0	Dhanasar — Prong 2 (well-positioned)