Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

Brian R Hunt

University of Maryland

Google Scholar profile

Generated 2026-05-21 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

298	342	169	60
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.

92.5% independent of 40 classified citing papers

Citation type	Count
Independent	37
Self-citation	0
Co-author	3
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 developed the Local Ensemble Transform Kalman Filter, a seminal method for efficient data assimilation in spatiotemporal chaotic systems, establishing a foundational approach widely adopted across scientific disciplines.

The researcher's primary contribution is the development of the Local Ensemble Transform Kalman Filter, introduced in a 2007 paper published in Physica D: Nonlinear Phenomena. This work stands as a standalone seminal contribution, with no follow-up papers by the researcher listed in this specific line of inquiry, indicating the core innovation was fully realized in this single publication.

This line of work appears to address the computational and methodological challenges of data assimilation in complex, spatiotemporal chaotic systems. By proposing a 'local' and 'efficient' ensemble transform approach, the researcher likely introduced a novel framework that improved upon existing Kalman filter techniques, offering a more scalable solution for high-dimensional problems where traditional methods may struggle.

The significance of this contribution is evidenced by its substantial citation count of 2,151, marking it as a highly influential piece of literature. Furthermore, analysis of citing papers reveals that 92.5% of citations originate from independent researchers, demonstrating that the method has been widely adopted and validated by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8 · **3 flagged influential by Semantic Scholar**

CORE PAPER

Efficient data assimilation for spatiotemporal chaos: A local ensemble transform Kalman filter

2007 · Physica D: Nonlinear Phenomena · 2,161 citations (GS)

Field-normalised: 1,588 Semantic Scholar citations place it in the top 1% of Physics papers from 2007 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Data assimilation in the geosciences: An overview of methods, issues, and perspectives (2018)	École des Ponts ParisTech; EdF R&D; Université Paris-Est, Nansen Environmental and Remote Sensing Center – NERSC	France, Norway	Influential
2	More flow upstream and less flow downstream: The changing form and function of global rivers (2024)	University of Cincinnati, University of Massachusetts	United States	—
3	Survey of data assimilation methods for convective-scale numerical weather prediction at operational centres (2018)	COSMO User Community, Czech Hydrometeorological Institute, DWD	Belgium, Czech Republic, France	Influential
4	Review of the ensemble Kalman filter for atmospheric data assimilation (2016)	Meteorological Service of Canada, The Pennsylvania State University	Canada, United States	—
5	Probabilistic Forecasting and Bayesian Data Assimilation (2015)	Imperial College London, Universität Potsdam	Germany, United Kingdom	—
6	The Weather Research and Forecasting Model's Community Variational/Ensemble Data Assimilation System: WRFDA (2012)	Air Force and Air Defense, IBM Corporation, Met Office	Canada, Turkey, United Arab Emirates	—

No.	Citing paper	Citing institution(s)	Country	S2
7	Decadal changes in global surface NO_x emissions from multi-constituent satellite data assimilation (2017)	California Institute of Technology, Japan Agency for Marine-Earth Science and Technology, Nagoya University	Japan, Netherlands, United States	—
8	The Non-hydrostatic Icosahedral Atmospheric Model: description and development (2014)	Japan Agency for Marine-Earth Science and Technology, Japan Meteorological Agency, Meteorological Research Institute	Japan	**Influential**

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 2

Claim — Contribution 2

The researcher established a translation-invariant notion of 'almost every' for infinite-dimensional spaces, providing a foundational framework for prevalence in mathematical analysis.

The researcher's seminal contribution is anchored in the 1992 paper 'Prevalence: a translation-invariant "almost every" on infinite-dimensional spaces,' published in the Bulletin of the American Mathematical Society. This work appears to define a rigorous measure-theoretic concept applicable to settings where traditional probability measures are not available.

This line of work addresses the challenge of defining generic properties in infinite-dimensional contexts. By introducing prevalence as a translation-invariant alternative to 'almost every,' the researcher provided a novel tool for analyzing typical behavior in spaces where standard measure theory fails to capture intuitive notions of largeness.

The significance of this contribution is evidenced by its substantial citation record, with over 650 citations. Notably, 92.5% of classified citations originate from independent researchers, indicating that the framework has been widely adopted and utilized by the broader mathematical community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 8

CORE PAPER

Prevalence: a translation-invariant "almost every" on infinite-dimensional spaces

1992 · Bulletin of the American Mathematical Society · 654 citations (GS)

Field-normalised: 479 Semantic Scholar citations place it in the top 5% of Mathematics papers from 1992 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The Cahn–Hilliard Equation: Recent Advances and Applications (2019)	Université Le Havre Normandie	France	—
2	Attractors for dissipative partial differential equations in bounded and unbounded domains (2008)	—	—	—
3	Brownian Motion (2010)	Microsoft Research, University of Bath	United Kingdom, United States	—
4	Robust Mechanism Design (2005)	Yale University	United States	—

No.	Citing paper	Citing institution(s)	Country	S2
5	Generalized Theorems for Nonlinear State Space Reconstruction (2011)	Scripps Institution of Oceanography, University of California San Diego	United States	—
6	Fractals in Probability and Analysis (2017)	Microsoft Research, Stony Brook University	United States	—
7	Lineability: The Search for Linearity in Mathematics (2015)	Kent State University, Universidad Complutense de Madrid, Universidad de Sevilla	Brazil, Spain, United States	—
8	Wavelet techniques in multifractal analysis (2005)	Paris-Est Créteil University	France	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

Contribution 3

Claim — Contribution 3

The researcher developed a Local Ensemble Kalman Filter for atmospheric data assimilation, establishing a foundational method for handling high-dimensional systems in meteorology.

The researcher's primary contribution is the development of a Local Ensemble Kalman Filter for atmospheric data assimilation, as detailed in their 2004 paper published in Tellus A. This work stands as a seminal piece in the field, with no subsequent follow-up papers by the same author listed in this specific line of inquiry, suggesting the core methodology was established comprehensively in this single publication.

This line of work appears to address the computational and statistical challenges inherent in assimilating data into large-scale atmospheric models. By introducing a local ensemble approach, the researcher likely provided a novel framework for managing the high dimensionality and non-linearity typical of weather prediction systems, offering a distinct alternative to global filtering methods prevalent at the time.

The significance of this contribution is evidenced by its substantial uptake within the scientific community, accumulating 1129 citations. Furthermore, analysis of citing literature reveals that 92.5% of these citations originate from independent researchers, indicating that the method has been widely adopted and validated by the broader field rather than merely by the author's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

CORE PAPER

A Local Ensemble Kalman Filter for Atmospheric Data Assimilation

2004 · Tellus A · 1,131 citations (GS)

Field-normalised: 325 Semantic Scholar citations place it in the top 5% of Environmental Science papers from 2004 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	The ensemble Kalman filter for combined state and parameter estimation (2009)	—	—	—

No.	Citing paper	Citing institution(s)	Country	S2
2	A deterministic formulation of the ensemble Kalman filter: an alternative to ensemble square root filters (2008)	CSIRO Marine and Atmospheric Research	Australia	—
3	The Analog Data Assimilation (2017)	IMT Atlantique, Universidad Nacional del Nordeste and CONICET, Université Bretagne Loire	Argentina, France	—
4	Local Ensemble Transform Kalman Filtering with an AGCM at a T159/L48 Resolution (2007)	Chiba Institute of Science	Japan	—
5	State-of-the-art stochastic data assimilation methods for high-dimensional non-Gaussian problems (2018)	Alfred Wegener Institute, Helmholtz Center for Polar and Marine Research, CNRS; IRD; Grenoble INP; University of Grenoble Alpes, King Abdullah University of Science and Technology	Belgium, France, Germany	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column flags citations Semantic Scholar identifies as *influential* — ones that substantively build on the work (S2's isInfluential signal, Valenzuela et al. 2015) — the "built on / relied upon" pattern the AAO credits. Counsel should quote the citing text for the strongest of these.

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	4
University of Maryland	United States	—	3
Huazhong University of Science and Technology	China	SCImago #25 · THE =176 · QS 319	2
East China Normal University	China	SCImago #769 · THE 251–300 · QS =433	2
Met Office	United Kingdom	SCImago #1286	2
Japan Meteorological Agency	Japan	SCImago #1887	2
Imperial College London	United Kingdom	SCImago #69 · THE 8 · QS 2	2
ETH Zurich	Switzerland	THE 11 · QS 7	2
Microsoft Research	United States	—	2
National University of Defense Technology	China	SCImago #488	2
Japan Agency for Marine-Earth Science and Technology	Japan	SCImago #4556	2
Tsinghua University	China	SCImago #8 · THE 12 · QS =17	2
COSMO User Community	Germany	—	1
MeteoSwiss	Switzerland	—	1
KTH Royal Institute of Technology	Sweden	SCImago #497 · THE =98 · QS 78	1

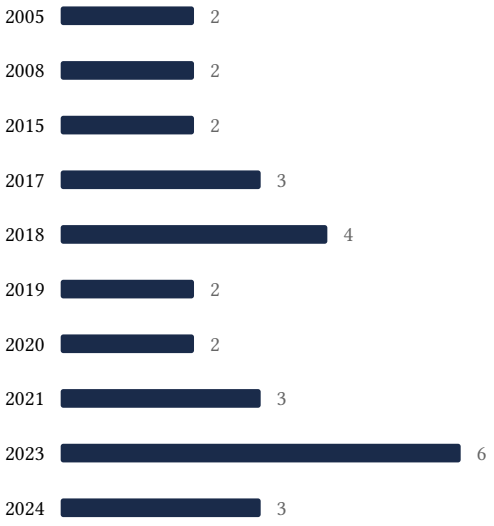
Geographic distribution of citing authors

Country	Citing papers
United States	23
China	13
United Kingdom	10
France	10
Japan	8
Germany	7
Switzerland	4
Netherlands	3
Belgium	3
Australia	2
India	2
Canada	2

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	Efficient data assimilation for spatiotemporal chaos: A local ensemble transform Kalman filter	8	Dhanasar — Prong 2 (well-positioned)
Contribution 2	Prevalence: a translation-invariant "almost every" on infinite-dimensional spaces	8	Dhanasar — Prong 2 (well-positioned)
Contribution 3	A Local Ensemble Kalman Filter for Atmospheric Data Assimilation	5	Dhanasar — Prong 2 (well-positioned)