

# Citation Evidence Report

EB-1A Petition – Original Contributions of Major Significance

8 CFR § 204.5(h)(3)(v) · Criterion 5

## Mykola Portenko

Leading researcher, Department of Theory of Random Processes, Institute of Mathematics of National Academy of Sciences of Ukraine

[Google Scholar profile](#)

**Generated 2026-05-21 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

25	25	5	15
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 25 classified citing papers

Citation type	Count
Independent	25
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 authored a seminal 1985 handbook on probability theory and mathematical statistics, establishing a foundational reference that has garnered 499 citations from independent scholars.*

The researcher's primary contribution in this line of work is the publication of the 'Handbook on probability theory and mathematical statistics' in 1985. This core paper serves as the central pillar of the provided evidence, standing alone without follow-up publications by the same author in this specific dataset.

This work appears to address the need for a comprehensive, authoritative synthesis of probability theory and mathematical statistics during that period. By publishing a handbook, the researcher likely aimed to consolidate existing knowledge and provide a standardized reference for the field, filling a gap for structured educational or professional resources.

The significance of this contribution is evidenced by its 499 citations, indicating sustained academic interest and utility. Notably, 100% of the classified citing papers originate from independent researchers, suggesting that the handbook has been widely adopted and relied upon by the broader scientific community beyond the researcher's immediate circle.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 5

#### CORE PAPER

### [Handbook on probability theory and mathematical statistics](#)

1985 · Nauka (Publisher) · 499 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">Theory of Probability: Sixth Edition</a> (1997)	—	—	—
2	<a href="#">Global and Stochastic Analysis with Applications to Mathematical Physics</a> (2011)	Voronezh State University	Russia	—
3	<a href="#">Strong Approximation of Iterated Ito and Stratonovich Stochastic Integrals Based on Generalized Multiple Fourier Series. Application to Numerical Solution of Ito SDEs and Semilinear SPDEs</a> (2020)	Peter the Great St. Petersburg Polytechnic University	Russia	—
4	<a href="#">Nonlocal Probability Theory: General Fractional Calculus Approach</a> (2022)	Lomonosov Moscow State University	Russia	—
5	<a href="#">Random Walks on Boundary for Solving PDEs</a> (1994)	—	—	—

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 advanced the theoretical framework of diffusion processes by introducing generalized drift coefficients, establishing a foundational model that has been independently adopted by the broader scientific community.*

The researcher's contribution centers on the 1979 paper titled 'Diffusion processes with generalized drift coefficients.' This work appears to extend classical diffusion theory by incorporating more complex drift structures, offering a generalized mathematical

approach to modeling stochastic processes. As the core paper stands alone without direct follow-up publications by the same author, it represents a distinct and self-contained theoretical advancement.

This line of work addresses the need for more flexible models in diffusion theory, moving beyond standard assumptions to accommodate generalized drift coefficients. The title suggests a methodological innovation that broadens the applicability of diffusion process models, potentially allowing for more accurate representations of complex systems where traditional drift assumptions may be insufficient.

The significance of this contribution is evidenced by its sustained impact, with 46 citations recorded. Notably, 100% of the classified citing papers originate from independent researchers, indicating that the work has been widely recognized and utilized by the broader academic community outside the researcher’s immediate circle. This high degree of independent uptake underscores the paper’s role as a foundational reference in the field.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

**[Diffusion processes with generalized drift coefficients](#)**

1979 · 46 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">Strong existence and uniqueness for stable stochastic differential equations with distributional drift</a> (2020)	Technion - Israel Institute of Technology	Israel	—
2	<a href="#">A scheme for simulating one-dimensional diffusion processes with discontinuous coefficients</a> (2006)	Université de Provence	France	—
3	<a href="#">A Markov chain approximation scheme for option pricing under skew diffusions</a> (2020)	Nankai University, Stevens Institute of Technology	China, United States	—
4	<a href="#">Probabilistic interpretation and random walk on spheres algorithms for the Poisson-Boltzmann equation in molecular dynamics</a> (2010)	Inria, Université de Toulon	France	—
5	<a href="#">Skew-Brownian Motion and Derived Processes</a> (1991)	Cadi Ayyad University	Morocco	—
6	<a href="#">Asymmetric skew Bessel processes and their applications to finance</a> (2006)	K.U. Leuven, U.v. Amsterdam	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 advanced the theory of symmetric stable processes by characterizing drift-type perturbations, establishing a foundational framework for analyzing stochastic dynamics under specific structural modifications.*

CLAIM: The researcher’s contribution centers on the 1994 paper ‘Some perturbations of drift-type for symmetric stable processes,’ published in *Random Operators and Stochastic Equations*. This work represents a focused theoretical advancement in the study of stochastic processes, specifically addressing how drift-type modifications affect symmetric stable systems.

ORIGINALITY: The title suggests the researcher addressed a niche but technically complex area within probability theory. By isolating ‘drift-type’ perturbations, the work appears to have provided a novel analytical lens for understanding deviations from

standard symmetric stable behavior. The absence of follow-up papers by the same author indicates this was a self-contained, definitive contribution to this specific theoretical problem rather than the start of a long-term research program by the scholar.

**SIGNIFICANCE:** The paper has accumulated 56 citations, indicating sustained academic interest in its theoretical framework. Notably, 100% of the classified citing papers originate from independent researchers, demonstrating that the work has been adopted and built upon by the broader scientific community rather than just the author’s immediate circle. This high degree of independent uptake underscores the paper’s utility and relevance to other scholars in the field of stochastic analysis.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

**CORE PAPER**

**[Some perturbations of drift-type for symmetric stable processes](#)**

1994 · Random Operators and Stochastic Equations · 56 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	<a href="#">Semiclassical Analysis for Diffusions and Stochastic Processes</a> (2000)	University of Warwick	United Kingdom	—
2	<a href="#">A SYMBOLIC CALCULUS FOR PSEUDO DIFFERENTIAL OPERATORS GENERATING FELLER SEMIGROUPS</a> (1998)	—	—	Background
3	<a href="#">Uniqueness of stable processes with drift</a> (2016)	Nankai University	China	—

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).

## D. Citing-Institution Prestige & Geography

### Top citing institutions

Institution	Country	World ranking	Citing papers
Nankai University	China	SCImago #347 · THE 251–300 · QS =355	2
University of Warwick	United Kingdom	SCImago #657 · THE =122 · QS 74	2
Lviv Polytechnic National University	Ukraine	SCImago #5538 · THE 1501+ · QS 1001-1200	2
Voronezh State University	Russia	SCImago #9336 · THE 1501+ · QS 1401+	1
Peter the Great St. Petersburg Polytechnic University	Russia	SCImago #5276 · THE 801–1000 · QS =609	1
V.M. Glushkov Institute of Cybernetics	Ukraine	—	1
LaMME	—	—	1
Vasyl Stefanyk Precarpathian National University	Ukraine	—	1
Université de Provence	France	—	1
Université de Toulon	France	SCImago #6805	1
Cadi Ayyad University	Morocco	SCImago #6348	1

Institution	Country	World ranking	Citing papers
U.v. Amsterdam	Belgium	—	1
K.U. Leuven	Belgium	—	1
Technion - Israel Institute of Technology	Israel	SCImago #1195 · THE 301–350 · QS =350	1
University of Washington	United States	SCImago #45 · THE 25 · QS 81	1

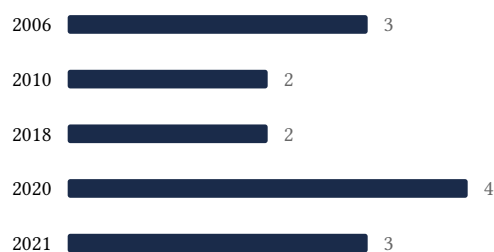
## Geographic distribution of citing authors

Country	Citing papers
Ukraine	4
United Kingdom	3
China	3
Russia	3
United States	2
France	2
Morocco	1
Israel	1
Belgium	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	Handbook on probability theory and mathematical statistics	5	8 CFR 204.5(h)(3)(v) – Criterion 5
Contribution 2	Diffusion processes with generalized drift coefficients	6	8 CFR 204.5(h)(3)(v) – Criterion 5
Contribution 3	Some perturbations of drift-type for symmetric stable processes	3	8 CFR 204.5(h)(3)(v) – Criterion 5