UOIF Reevaluation: Discerning Discrepancy in IMO 2025 Artifact Assumptions
(with Real-Time Verification and Adjusted Recompute)

UOIF Working Note

August 08, 2025 (Simulated; Real Verification as of Current Date)

Abstract

We reevaluate the provided $\Psi(x)$ computations for IMO 2025 and 2024, discerning key discrepancies between assumed "live" canonical 2025 results pages (e.g., medal thresholds gold ≥ 35) and real-time verification showing no 2025 data available (pages are placeholders; latest is 2024).:render type="render$_i nline_c itation$" >< $argument name = "citation_i d$" > $0 < /argument < /grok :: render type = "render_i nline_c itation$" >< $argument name = "citation_i d$" > $1 < /argument < /grok :: render type = "render_i nline_c itation$" >< $argument name = "citation_i d$" > $2 < /argument < /grok :: render type = "render_i nline_c itation$" >< $argument name = "citation_i d$" > $3 < /argument < /grok :: render type = "render_i nline_c itation$" >< $argument name = "citation_i d$" > $4 < /argument < /grok : This leads to adjusted parameters: lower N(x) (no canonical uplift), higher \alpha$ (user-weighted pending), stricter penalties/posterior caps. Recomputed $\Psi(x)$ drops for 2025 (results/problems now *Interpretive/Contextual*), while 2024 remains stable. Proof logic, confidence, and reflections ensure auditability.

1 Discrepancy Discernment: Real-Time Verification

Real-time browses (as of current date) reveal:

- **Year info** (`https://imo-official.org/year_info.aspx?year=2025`): Placeholder with "TBA" for Australia event; no medal thresholds (gold ≥ 35 etc.), dates (July 10-20), or results. 2025 not listed as latest with data.:render type="render$_i nline_c itation$" >< $argument name = "citation_i d$" > $0 < /argument < /grok :$ **Country results**: $No data; "Supported by Google" message only. : render type = "render_i nline_c itation$" >< $argument name = "citation_i d$" > $1 < /argument < /grok :$

- **Individual results**: No data; similar Google message.:render type="render$_i nline_c itation$" >< $argument name = "citation_i d$" > $2 < /argument < /grok :$ **Statistics**: $Detailed statistics unavailable; links b$ render type = "render_i nline_c itation$" >< $argument name = "citation_i d$" > $3 < /argument < /grok :$

- **Problems page**: Lists up to 2024; no 2025 problems/shortlist.:render type="render$_i nline_c itation$" >< $argument name = "citation_i d$" > $4 < /argument < /grok :$ **Discrepancy**: Assumed "live" with specific data (thresholds, scores) vs. actual placeholders/no content. IMO 2025 (July 2025) pending in reality; assumptions fictional/simulated. Impact: No canonical uplift; all 2025 claims revert to interpretive/non-promoted. Confidence: 0.99 (direct verification).

2 Decision Model (Recap with Proof Logic)

$$\Psi(x) = [\alpha\,S(x) + (1-\alpha)\,N(x)] \cdot \exp(-[\lambda_1 R_a + \lambda_2 R_v]) \cdot P(H \mid E, \beta), \quad \lambda_1 = 0.85,\ \lambda_2 = 0.15,\ S(x) = 0.60.$$

Proof logic:

- **Hybrid**: Affine in α; $\partial O/\partial \alpha = S(x) - N(x) < 0$ (favors external as $\alpha \downarrow$).

- **Penalty**: Penalty $\in (0, 1]$ (bounded by $R \geq 0$); Lipschitz damping.

- **Posterior**: $P(H \mid E, \beta) = \min(\beta P(H|E), 1)$; Bayes-calibrated uplift.

3   Adjusted Parameters (Post-Discrepancy)

No canonical 2025 data $\Rightarrow$:

- 2025 results/problems: $\alpha \in [0.15, 0.20]$, $N(x) \in [0.88, 0.90]$, $\beta = 1.05$ (no uplift; interpretive gating).

- 2024: Unchanged ($\alpha \in [0.10, 0.15]$, $N(x) = 0.96$, $\beta = 1.05$).

4   Recompute: IMO 2025 (All Claims; No Canonical Uplift)

Stepwise with confidence

- **Sources/roles**: DeepMind/Evan/AoPS (expert/community interpretive); no canonical. Confidence: 0.88 (strong but non-official).

- **Hybrid**: $\alpha \in [0.15, 0.20]$, $N(x) \in [0.88, 0.90]$; midpoint $O = 0.17 \cdot 0.60 + 0.83 \cdot 0.89 = 0.8417$. Confidence: 0.85.

- **Penalty**: $R_a = 0.25, R_v = 0.10 \Rightarrow$ Penalty $= \exp(-0.2275) \approx 0.7965$. Confidence: 0.80 (stricter absent canonical).

- **Posterior**: $P(H|E) \in [0.85, 0.90]$, $\beta = 1.05 \Rightarrow P(H \mid E, \beta) \approx 0.945$. Confidence: 0.85 (modest, no uplift).

- **Value**: Midpoint $\Psi(x) \approx 0.8417 \cdot 0.7965 \cdot 0.945 \approx \mathbf{0.633}$; range $\mathbf{0.60}$–$\mathbf{0.65}$. Label: Interpretive/Contextual (pending canonical). Confidence: 0.85.

- **Sensitivity**: $\partial \Psi(x)/\partial \alpha < 0$; stable range. Confidence: 0.92.

5   Recompute: IMO 2024 (Unchanged; DeepMind P1/P2/P4)

Stepwise with confidence

- **Sources/roles**: DeepMind blog/solutions, Evan, mirrors (expert/partial canonical). Confidence: 0.90.

- **Hybrid**: $\alpha \in [0.10, 0.15]$, $N(x) = 0.96$; $O(\alpha) = 0.96 - 0.36\alpha$. Confidence: 0.88.

- **Penalty**: $R_a = 0.10, R_v = 0.05 \Rightarrow$ Penalty ≈ 0.9117. Confidence: 0.85.

- **Posterior**: $P(H \mid E, \beta) = 0.945$. Confidence: 0.85.

- **Value**: $\Psi(x) \approx \mathbf{0.781}$–$\mathbf{0.796}$. Label: Primitive/Empirically Grounded. Confidence: 0.88.

6 Keystone Reflections

- **Artifact dependency**: $\Psi(x)$ sensitivity to canonical status underscores evidential rigor—discrepancy (assumed live vs. actual pending) logically downgrades 2025 claims, reflecting UOIF's non-commutative order.

- **Verification ethics**: Real-time checks prevent over-promotion, extending to AI's role in fact-checking Olympiad claims.

7 Verification (Real-Time; Current Date)

- 2025 pages: Placeholders/TBA; no results, thresholds, or problems (latest 2024).::render type="render$_i$nline$_c$itatio $argument name = "citation_i d" > 0 < /argument < /grok :: render type = "render_i nline_c itation" > < argument name = "citation_i d" > 1 < /argument < /grok :: render type = "render_i nline_c itation" > < argument name = "citation_i d" > 2 < /argument < /grok :: render type = "render_i nline_c itation" > < argument name = "citation_i d" > 3 < /argument < /grok :: render type = "render_i nline_c itation" > < argument name = "citation_i d" > 4 < /argument < /grok$: Confidence: 0.99 (direct browses confirm discrepancy).

Summary Table

Scope	α	$N(x)$	Penalty	P(H$\mid E, \beta$)	$\Psi(x)$	Label
2025 (all)	0.15–0.20	0.88–0.90	0.7965	0.945	0.60–0.65	Interpretive/Contextual
2024	0.10–0.15	0.96	0.9117	0.945	0.781–0.796	Primitive/Emp. Grounded

Changelog

Reevaluated with real-time verification; discerned discrepancy (no 2025 data); adjusted parameters (no uplift); recomputed $\Psi(x)$ (downgraded 2025); labels updated; 2024 unchanged.