Quantum Gravity Statistic and the Use of Negative Dimensionality

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Abstract

In this paper we will show that some problems are easier investigated when switching (coordinate-transforming) to negative dimensionality [A1]. This can be especially useful when considering systems with extreme probability dependencies on the number of degrees of freedom of the system (like in many AI applications). As it can be difficult of normalize such systems to reasonable (numerically suitable) wave or probability functions the transformation to negative dimensions opens another door to a stable numeric realm. Unfortunately, the classical von Neumann statistic does not contain the parameter of dimensionality and hence, cannot handle negative dimensionality. We require a Quantum Gravity statistic [A2 – A4]. With this tool at hand we will here investigate another set of error scenarios for artificial intelligence in comparison with the math based on the classical non-dimensional statistic (see also [A6, A7].

Abstract Reference

[A1] N. Schwarzer, “Negative Dimensionality – Cartesian Spaces or Space-Times”, 2026, a SIO publication, www.siomec.com

[A2] N. Schwarzer, “High Expectations – A Bit of Quantum Gravity Statistics”, 2025, a secret SIO mathematical foundations paper, www.siomec.com

[A3] N. Schwarzer, “The Quantum Gravity Expectation Value”, 2025, a secret SIO publication, www.siomec.com

[A4] N. Schwarzer, “Quantum Gravity Statistics for Fermions”, 2025, a secret SIO publication, www.siomec.com

[A5] N. Schwarzer, “The Quantum Gravity Heisenberg Uncertainty”, 2025, a secret SIO publication, www.siomec.com

[A6] N. Schwarzer, “Artificial Intelligence and Why We Are Still Smarter… Well, Some of Us?”, 2026, a SIO publication, www.siomec.com

[A7] N. Schwarzer, “Artificial Intelligence… – Error Scenarios”, 2026, a SIO publication, www.siomec.com

Why Negative Dimensionality

In [1] we have shown how in cartesian systems a simple coordinate transformation can bring us into the realm of negative dimensional spaces or space-times. In figure 1 we plotted the n-dependency (n gives the number of dimensions of the system in question) for a variety of quantum state probabilities (absolute values). We realize that negative dimensionality gives us easier access to numerically optimal models.

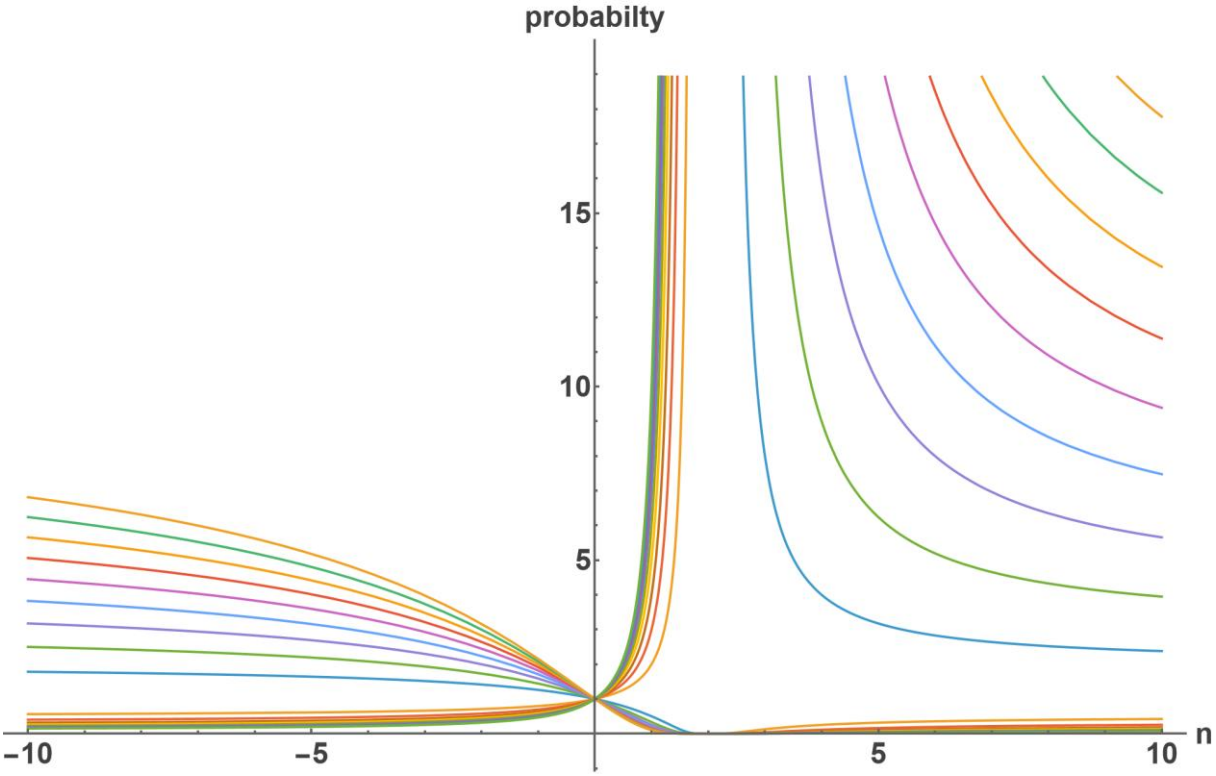

Fig. 1: Probability or wave function distribution for various classical quantum states as a function of dimensionality n. See text.

Even though this does not necessarily directly help the error behavior as it was discussed in our previous papers [2, 3] (figure 2), our computational system (potentially an LLM) would still profit from a higher numerical stability.

In addition the switch in sign for the dimensionality might also help to detect certain symmetries. In order to see this one simply needs to compare the unproblematic switch in the dimensional sign any cartesian system with the effect on a spherical one [4, 5]. This is especially usefull for the most powerful neuronal feature the human brain pocesses, which is the pattern recognition. As this process also is one of, if not to sey THE key element in every artificial intelligent system, we cnnot help suspecting that there is tremeandous value in a pattern regongition tool posseing the option for a “dimensional switch”.

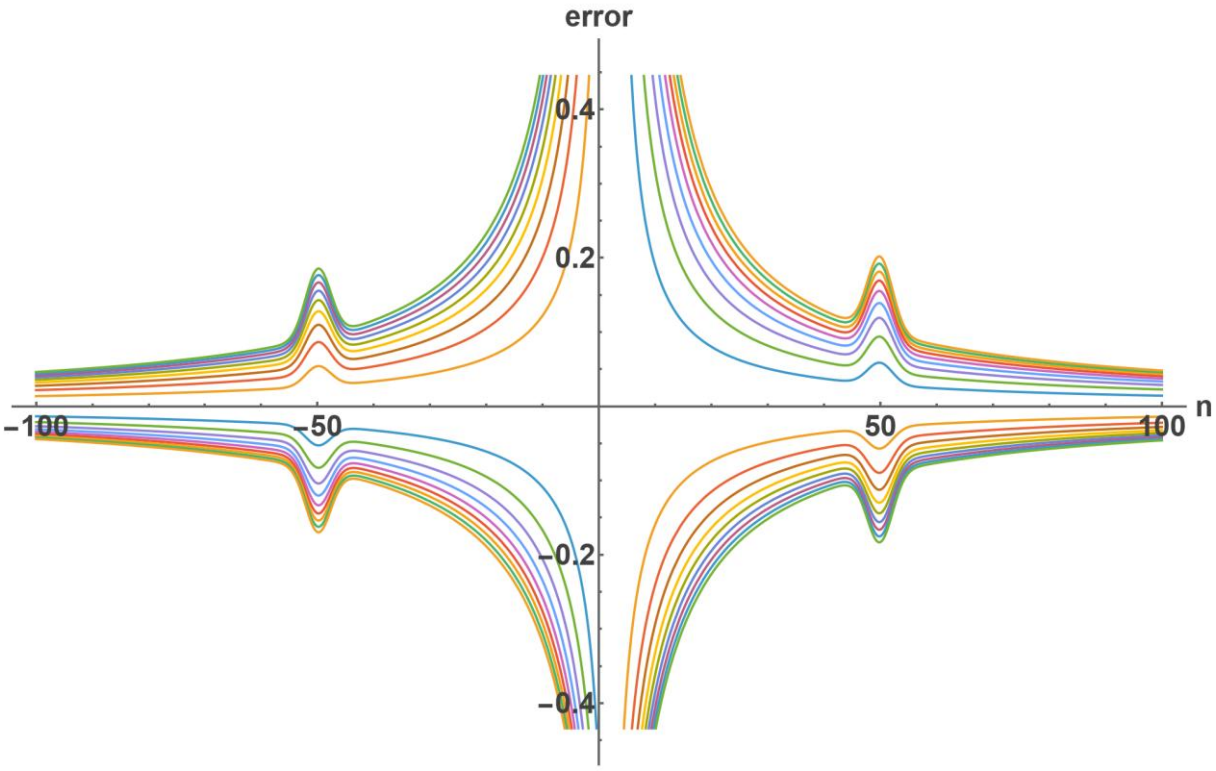

Fig. 2: Local dimensional error source around n=±50. C.f. [2, 3] for more information.

And What is our Finding Good For? Some Keywords

- AI-race
- Key ingredient for smartly deflating the AI-bubble and harvesting the 136 trillion in there
- Dramatic cost-reduction for LLM training (currently over 100 million US$)
- Increase of energy-efficiency
- Path towards a Natural – Artificial – Intelligence
- Lower error number
- Higher artificial creativity
- …

References

[1] N. Schwarzer, "Negative Dimensionality – Cartesian Spaces or Space-Times", 2026, a SIO publication, www.siomec.com

[2] N. Schwarzer, "Artificial Intelligence and Why We Are Still Smarter… Well, Some of Us?", 2026, a SIO publication, www.siomec.com

[3] N. Schwarzer, "Artificial Intelligence… – Error Scenarios", 2026, a SIO publication, www.siomec.com

[4] https://math.stackexchange.com/questions/1176034/what-are-the-negative-dimentional-n-sphere-and-n-cube

[5] https://lyamboylan.github.io/negative_dimensions.html