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CLOSING ROUND TABLE

Are pure and applied mathematics drifting apart?

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I am not an applied mathematician, and the viewpoint I will present is that of a fascinated outsider.

I will argue that one can recognize three basic modes of how mathematics helps us to understand the world: models, theories, and metaphors.
• Models involve measurements. Guesses, computing power, and in the final count, practical use.

• Theories sometimes develop from models. They differ from models basically by being more ambitious, but there is also a qualitative leap between the two modes.

• Metaphors ("man-machine", "invisible hand", "artificial intelligence"...) can generate models and theories, but their principle function is to inject a flavor of human values into an abstract cognitive discourse.