

Abstract Submitted
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The Universe's Fifth Dimension, Information Density, and Its Impact on Physical Laws, Especially on Energy Exchanges VASILE COMAN¹,
None — We derive laws of physics using a simple approach. We observe the world, we propose scenarios, and if they are validated by observation, we turn them into laws. Current laws constructed are dependent on space and time abstracted by the observer. But what happen when space and time are not the only ones required to be abstracted? I propose to add a new dimension to the way we abstract the laws of the Universe, including the laws of physics. This dimension is related to the complexity of processes in which any physical entity in the Universe is participating during its lifecycle. And because processes can always be described by information, we propose an associated unit called “information density” as a way to measure it. How important is missing a new dimension? In one of the episodes, Sagan made an analogy by describing the communication between a 2D “square” and a 3D “apple.” He concluded that the “square” can see the entire “apple” through “sections,” but it will “miss” on the overall shape. To continue Sagan’s analogy, the new dimension, called information processing, is added to the other four. This presentation shows how this concept applies to all physical laws.

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