Inertia as a Path to Metaphysics

Text drawn from a discussion on the Planète Astronomie forum

29 and 30 October 2026

Inertia may seem to move us away from the question of a motive principle: after the initial action that imparted momentum to a body has ceased, the body continues to move. But does the cessation of that action necessarily mean the absence of any currently acting cause? This is precisely the point I propose to examine.

By “currently acting cause,” I mean a cause that acts in the present and accounts for motion as it occurs. The question therefore concerns both the continuation of motion and its initiation. I distinguish two ways of connecting all motion to such a cause within my approach.

The first begins with the necessity, which I defend, of a present instant for the Universe. Within an instant considered as having no duration, no motion takes place. Motion therefore involves a transition from one present state of the Universe to another. According to the principle of causality I adopt, this real transformation requires a cause acting in the present. This also applies to inertial motion, even when uniform.

The second begins with a fully relational conception of space. If spatial extension depends on the relations bodies maintain with one another, motion must also be understood relationally. In the conception I develop, these relations play a constitutive role: they account for the arrangement of bodies and, through their evolution, for their motion. It is in this sense that I consider a change in the present relation between bodies to be a currently acting cause of motion. Inertia itself must therefore have a relational foundation.

Let us return to the projected body. The initial action can be described, as a first approximation, as a mechanical action through contact, although the subsequent relational analysis requires this account to be developed further. But if the continuation of motion requires a currently acting cause, that cause cannot be reduced to the initial action, which has ceased.

At this stage of the argument, I use “mechanical” to mean an action through contact between bodies, either directly or through a quantized medium. Yet, according to my analysis, such an action cannot constitute the currently acting cause of inertia. Inertia therefore leads us to seek a non-mechanical relational causality.

In my approach, matter considered solely in its quantitative reality can, by itself, act only mechanically. A causality that cannot be reduced to this mode of action therefore requires a principle distinct from quantized matter.

Its mode of action remains to be determined. The answer I develop is that of an immanent action through interrelation, according to the determinate nature of the elements. The motive principle would act within the very relations constituting the physical world, according to what the constituents involved are. It would thus account for both their relations of rest and their relations of motion.

It is because of this mode of action, irreducible to that of quantized matter, that I describe this principle as “spiritual.” Indeed, an immanent action through interrelation, as I describe it here, cannot be material. Furthermore, since matter considered solely in its quantitative reality can, by itself, act only mechanically, it cannot be the principle of such an action. The motive principle thus ensures the unity of the physical world: without a principle acting in this way, bodies would simply be juxtaposed, without forming a unified Universe.

From this point onward, the very notion of mechanical action must be re-examined. What we describe, as a first approximation, as an action “through contact” should be understood more fundamentally in terms of this interrelation. The imparting of momentum and the continuation of motion would then be studied within a single causal framework.

It is in this sense that inertia can become a “path” to metaphysics: it provides a starting point for reasoning back to the existence and mode of action of the motive principle of the physical world.

My objection to special relativity is therefore, within this research, only the tip of the iceberg. Behind the question of simultaneity lie those of the present, real change, causality, and inertia. They lead to the search for a fully relational conception of space and motion, whose metaphysical framework rests on the mode of action of the motive principle.

Since there cannot be an infinite regress in the order of causes, this approach leads us to recognize two fundamental principles: the motive principle and the constituents. The constituents are the elements of which the physical world is composed; the motive principle acts immanently through interrelation, according to their determinate nature.

As far as the physical world is concerned, this seems to me to be the most fundamental conceptual postulate one can put forward, and on which to build the conceptual framework of a general theory of the Universe.

Philippe de Bellescize