Attribute Spaces vs Standard Model

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"In mathematics, a metric space is a set together with a metric on the set. The metric is a function that defines a concept of distance between any two members of the set, which are usually called points."
https://en.wikipedia.org/wiki/Metric_space

An attribute is a defining characteristic of something or someone. So here, we define:

In physics, an *attribute space* is a set together with a defining physical characteristic always associated with that set. The attribute is typically a function of useful parameters such as force per unit area/length which can characterize pressure/elasticity.

Examples:

$\mathbf{X} \cup E_\rho$ = Euclidean space plus energy density

$\{\{\mathbf{X}, Z_0\}, \{t, Y_0\}\}$ = a model of space-time where Z_0 is the impedance of free space and Y_0 is the elasticity of time

$\{\{x, y\}, \varepsilon_0, t\}$ = a 2D attribute space that only allows one force with an associated electric field that can evolve over time, t

$\{x, y, z, t\}$ = $\{\mathbf{X}, t\}$ = Euclidean space plus time which is NOT an attribute space and cannot mediate ANY forces

Part 2 – Standard Model + GR Version:

For those who prefer the Standard Model, the simplest representation is the field-excitation version:

{electromagnetic, photon}
{strong/color, gluon}
{weak, W/Z}
{mass-of-W/Z / Higgs, Higgs}
{**X**, t} – assuming space-time has no attributes
{Riemann geometry} – for General Relativity

Each field and excitation has its rules / governing equations and stipulations. These, taken together for the four fields above plus an associated list of 20 parameters, comprise the Standard Model plus General Relativity, essentially – convention's version of Example 2 above (with a LOT of details about interactions and stipulations).

It has to be appreciated that above represents approximately 100 years of accumulated disparate independently performed research for about as many motivations. In retrospect, there was no grand conspiracy over that same period to guide physics to where it is today. You may imagine (and forgive) the physics community for the last 100 years as a giant curious blind beast with many independent tentacles exploring a new cave with new properties and characteristics.

I used to characterize the Standard Model with two core assumptions about inherent indeterminacy and virtual boson exchange, but a third core assumption is extremely clear to me now from a historical perspective: no space-time attributes. I'm fairly certain that convention will *never* re-embrace impedance and elasticity as I have; for them, it would be going backwards.