

5. "I want more category
theory"

Some things we use and discuss

And others which we will talk about in future work

- Diagram categories in the presence of cartesian/symmetric monoidal structures
 - these let us talk about more complicated physics, e.g. Maxwell's house, Navier–Stokes
- Homotopical structure of diagram categories
 - weak equivalences of are defined so that “w.e. implies bijective solutions”
 - we give a sufficient (but not necessary) condition in terms of **initial functors**; these generalise to something more 2-categorical: **relatively initial functors**
- The framework is “independent of geometry”
 - most of our examples are in PDEs, but there's nothing stopping us from talking about e.g. finite difference equations, or probabilistic/statistical things (e.g. structural equation models)
- Tonti's desired classification of physical theories?