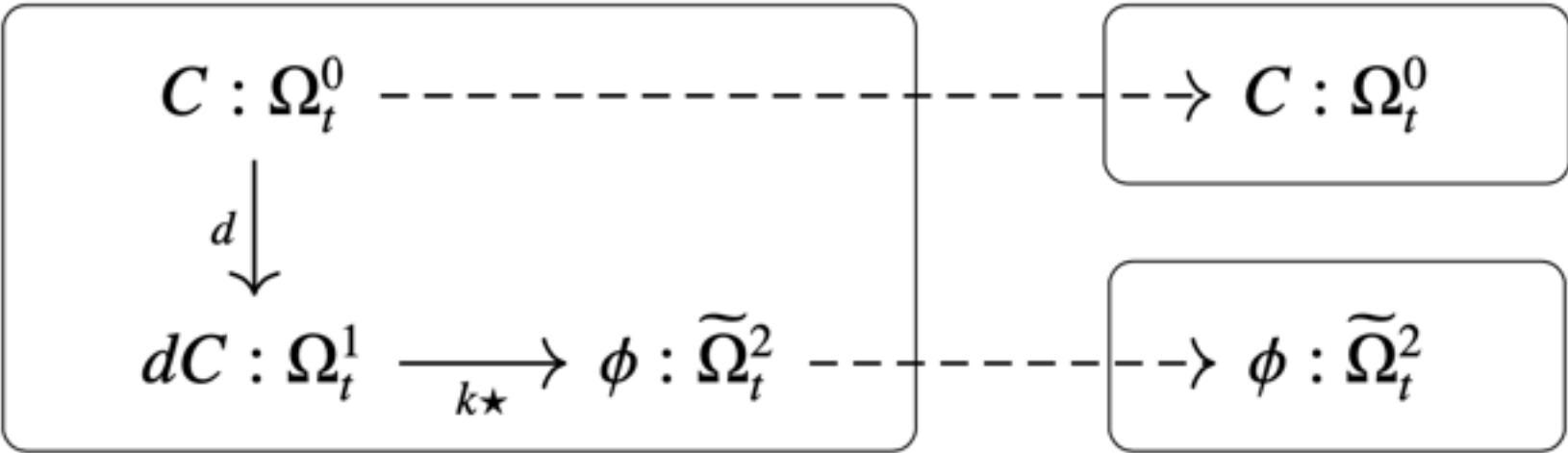


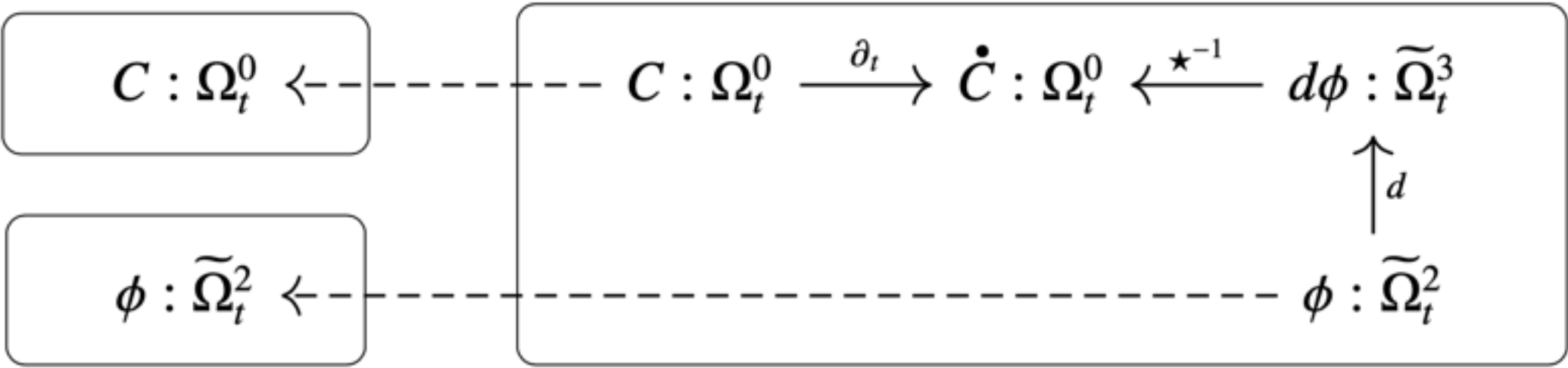
Constituent components of diffusion

Understanding equations as conjunctions of principles

Multispans (components)

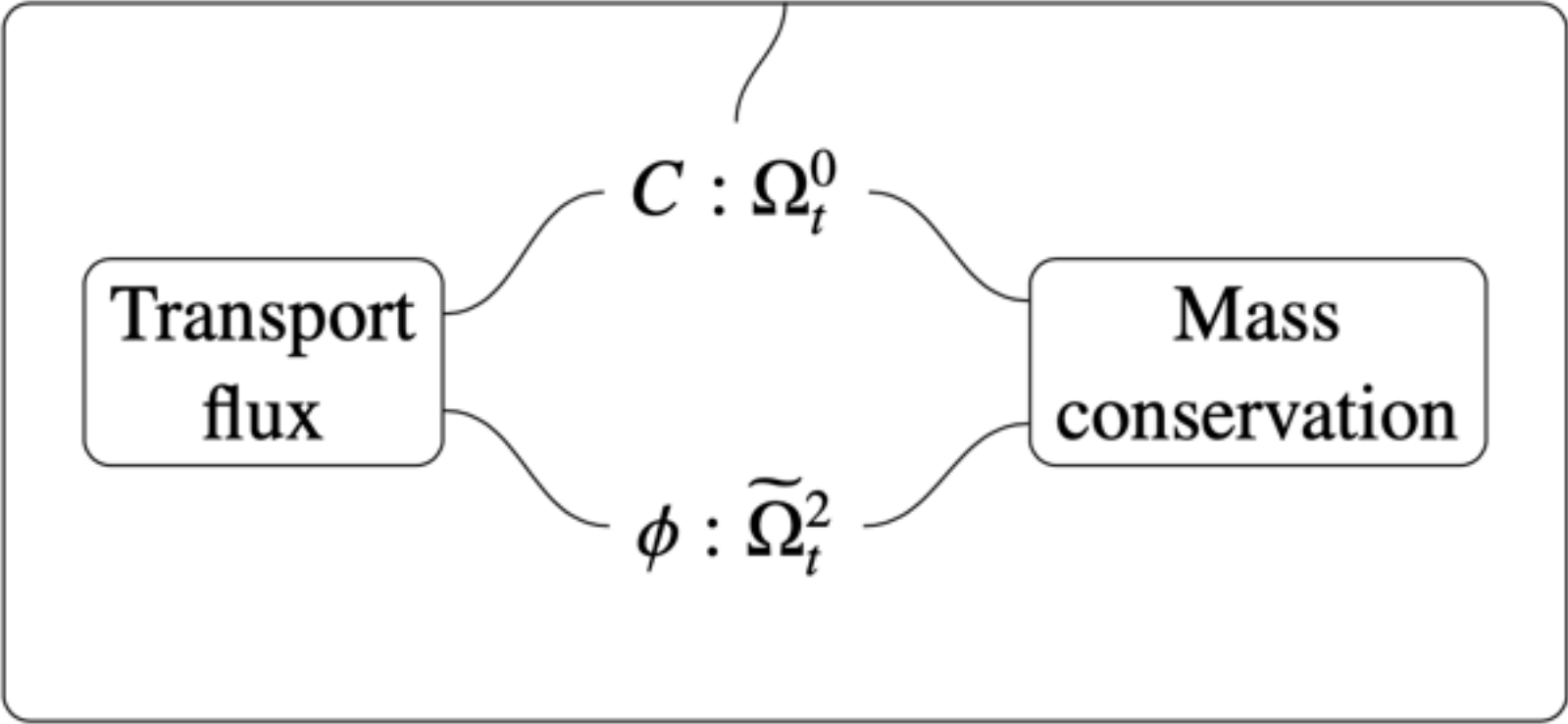


Fick's first law



Conservation of mass

UWD (schema)



Composition pattern for diffusion

Constituent components of diffusion

Understanding equations as conjunctions of principles

- Now we can extend or replace *individual components*
- E.g. to describe advection instead of diffusion, we can just plug a different diagram into the “Transport flux” box: replace Fick’s first law with one that describes flux due to advection along a moving field

$$\begin{array}{ccc} C : \Omega_t^0 & \xrightarrow{\star} & \tilde{C} : \tilde{\Omega}_t^3 \\ & & \downarrow -\iota_V \\ & & \phi : \tilde{\Omega}_t^2 \end{array}$$