For each model $M_j \in \mathcal{M}$
Define the domain of feasible inputs - Ω_0^j
- *existence of the output*
- *realism in the physics*

Define the codomain of plausible outputs - D_G
- *robust numerical simulation without spurious effects*
- *macroscopically meaningful flow dynamics*
- *inundation of a designated region*

For each model $M_j \in \mathcal{M}$
Construct the specialized inputs
$\Omega^j = f_{Mj}^{-1}[D_G \cap f_{Mj}(\Omega_0^j)]$

For each model $M_j \in \mathcal{M}$
For each piece of observed data $D_i \in \mathcal{D}$
Construct the partial solutions
$\Omega_i^j = f_{Mj}^{-1}[D_i \cap f_{Mj}(\Omega^j)]$

For each model $M_j \in \mathcal{M}$
Statistical summary of:
$f_{Mj}(\Omega^j)$ - plausible outputs
$f_{Mj}(\Omega_i^j)$ - partial solutions
$f_{Mj}(\Omega_{i1}^j \cap ... \cap \Omega_{ik}^j)$
intersection of partial solutions