



The image shows four interlocking puzzle pieces arranged in a 2x2 grid. Each piece has a unique shape and color, and contains text describing a component of a multi-scale simulation framework. The pieces are: a blue piece (top-left), a red piece (top-right), a green piece (bottom-left), and an orange piece (bottom-right). Each piece has a tab or a blank that fits into its neighbor, forming a cohesive whole.

Communicators

forward sending
backward receive

Level Transition

polynomial
injection

...

Multiple Levels

2 or more
time coarsening
space coarsening

Integrators

SDC
Velocity Verlet
Boris