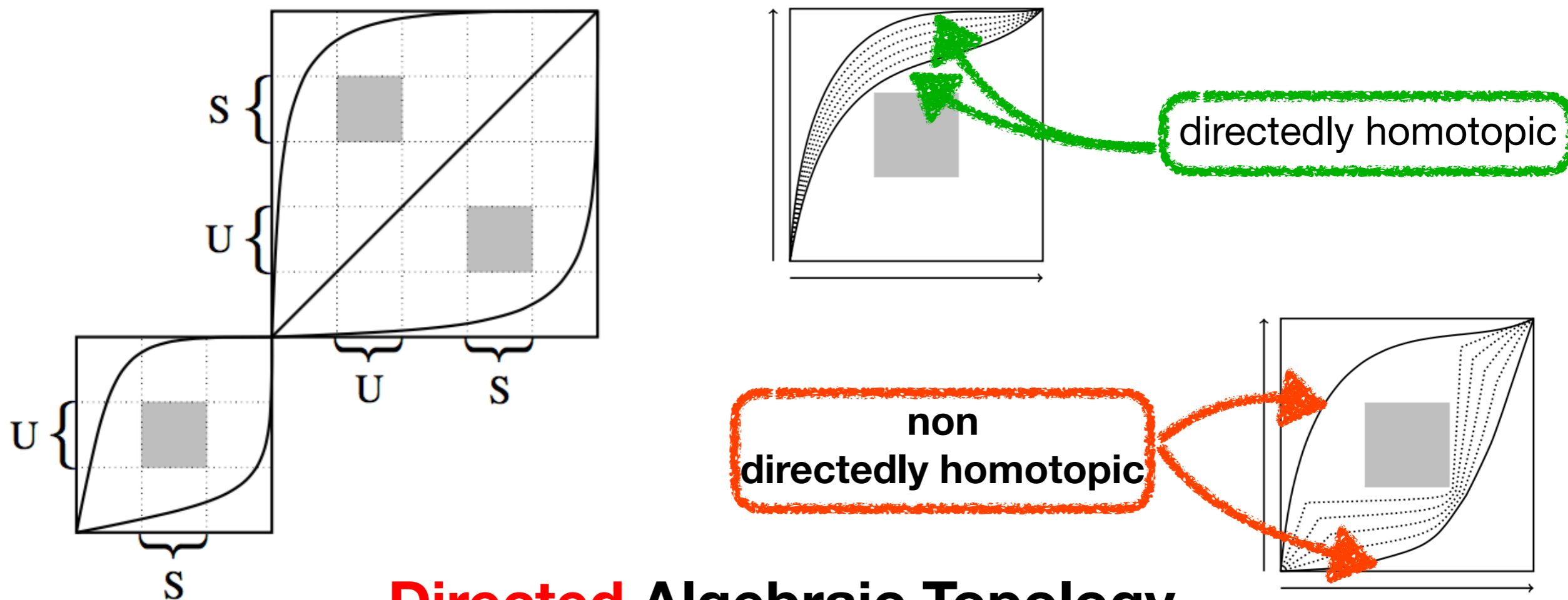


# Computation of Natural Homology

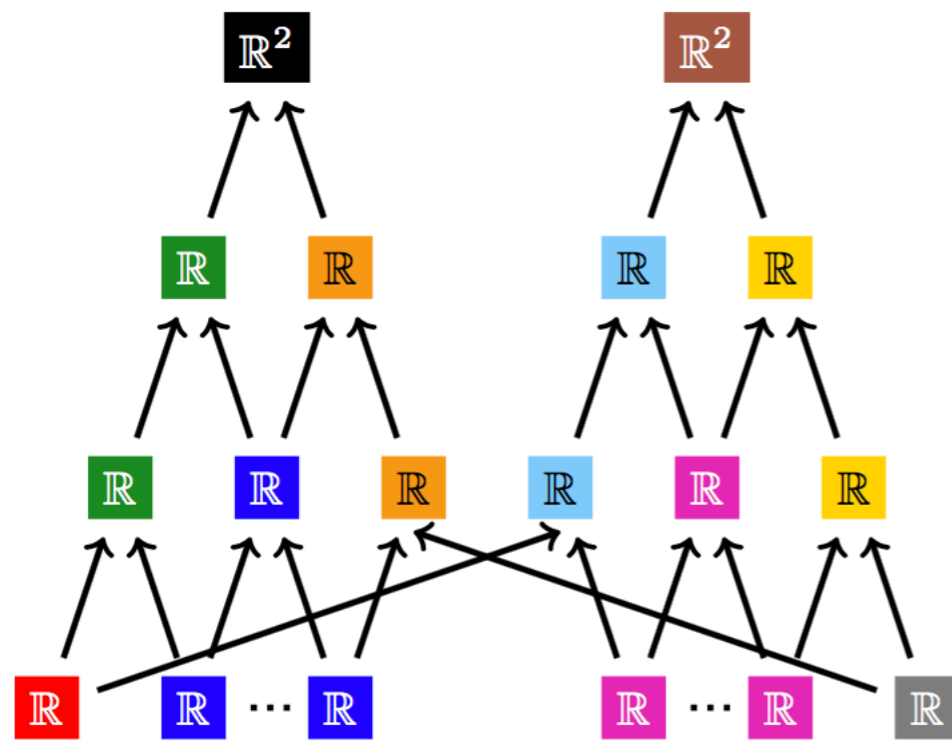
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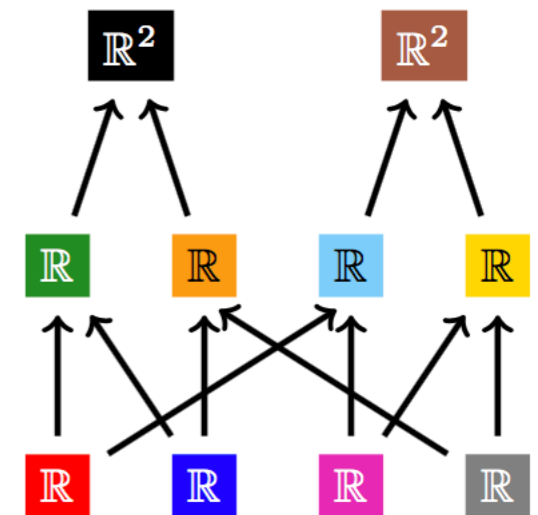
**Directed Algebraic Topology**

# Computation of Natural Homology



given by the geometry  
(continuous)

bisimilar to  
.....▶  
“the same evolution as”



given by the combinatorics  
(discrete)

## Natural Homology is:

- an invariant modulo directed homotopy
- precise enough in many cases
- computable for simple truly concurrent systems
- partially modular

J. Dubut, J. Goubault-Larrecq, E. Goubault,  
*Natural Homology*. In ICALP'15