

What elements are needed
for a general theory of CPS
that can provide a
foundation for multiple
application domains?

Date



INSTITUT NATIONAL
DE RECHERCHE
EN INFORMATIQUE
ET EN AUTOMATIQUE



Albert Benveniste, INRIA-Rennes

Avoid the UMGM (Uniformly Most General Modeling framework)



I need

- Mechanics
- Thermodynamics
- Electronics
- Softwaronics
- Architecturonics
- ...

Wanted: one most general
framework encompassing
everything

Lost: anything beyond (at best)
simulation

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I need

- The same...

Wanted

- Avoid most general framework
- Techniques for heterogeneous composition of different kinds of models

Cost: need for a theory of interfaces

Developing an interface theory



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Wanted: one flexible glue that I can tune very precisely

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Developing an interface theory



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Wanted

- Math
- Algebra
- Theorems that allow lifting properties of each single aspect to global system