

Positionnement Simulation/Méthodes formelles en bref

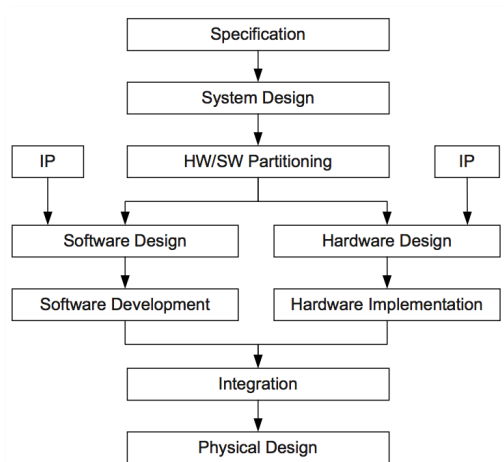
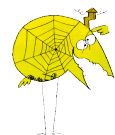
Laurence Pierre
Laboratoire TIMA



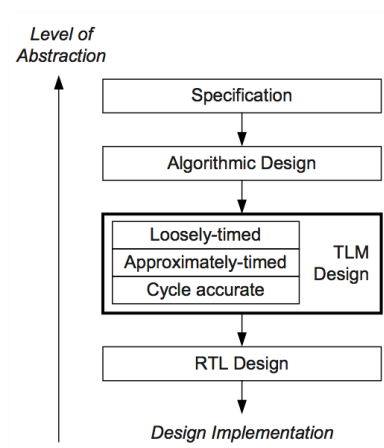
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VÉRIFICATION DANS LE FLOT DE CONCEPTION ?



Flot ESL

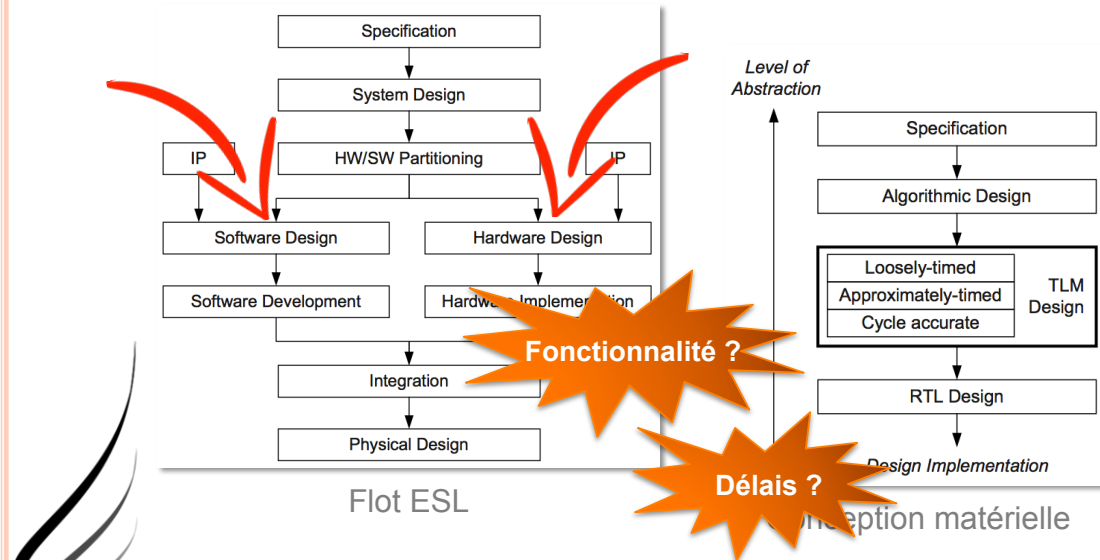
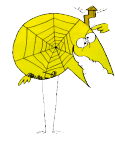


Conception matérielle

"Debugging at the Electronic System Level", F.Rogin et R.Drechler, Springer

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VÉRIFICATION DANS LE FLOT DE CONCEPTION ?

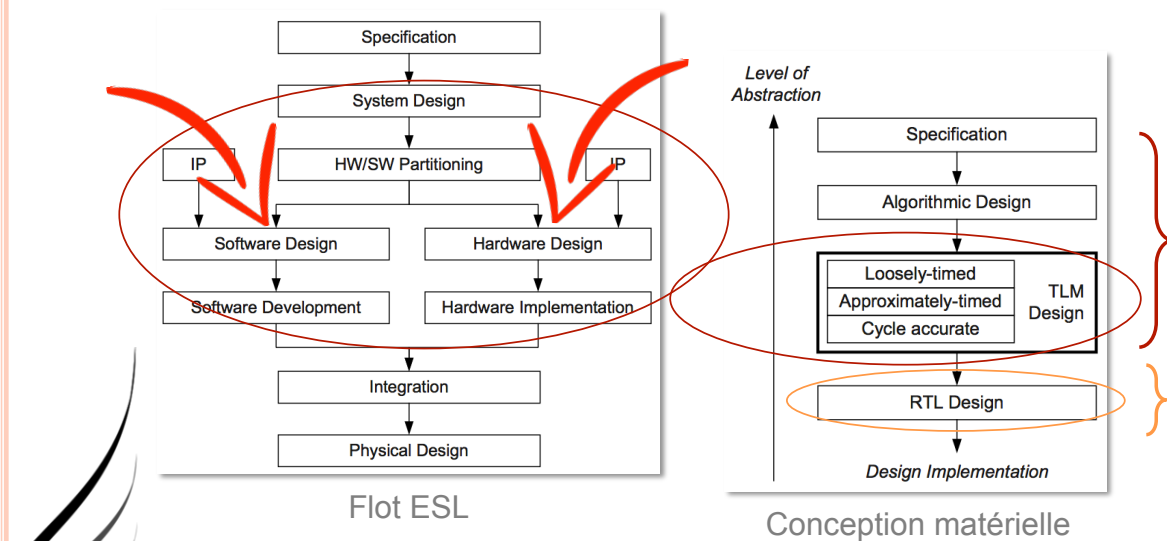
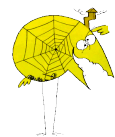


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VÉRIFICATION DANS LE FLOT DE CONCEPTION ?



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VÉRIF. DYNAMIQUE / VÉRIF. FORMELLE

- Exploiter des méthodes complémentaires :
vérification dynamique vs vérification formelle

- Vérification dynamique

- Simulation

- A différents niveaux d'abstraction

- Vérification semi-formelle

- Simulation/exécution + assertions formelles

- Méthodes formelles

- Analyse statique

- Model checking

- Theorem provers / assistants de preuve



Exposé 1

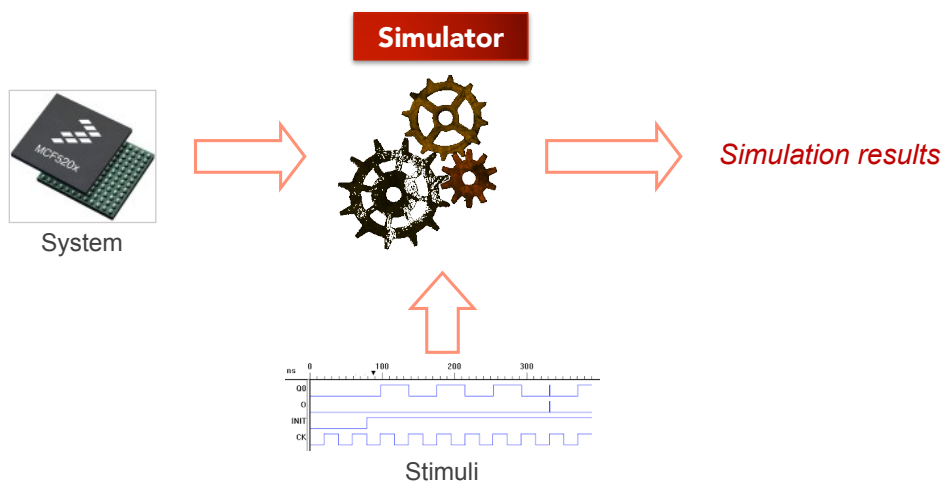


Exposé 2



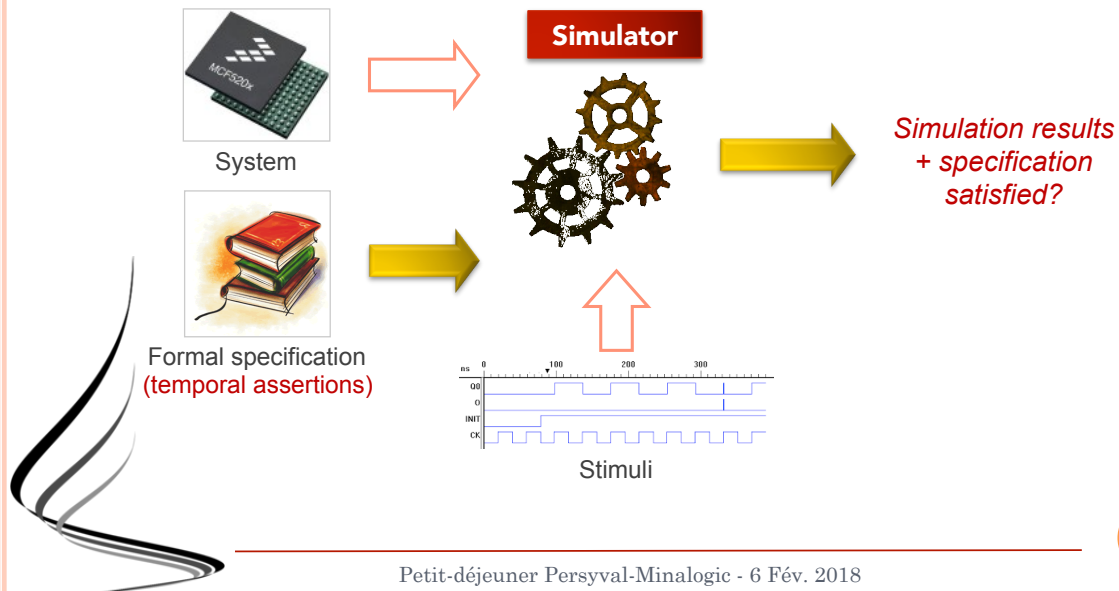
VÉRIFICATION DYNAMIQUE

- Simulation, à différents niveaux d'abstraction



VÉRIFICATION DYNAMIQUE

○ Vérification semi-formelle (HW, HW+SW, SW)

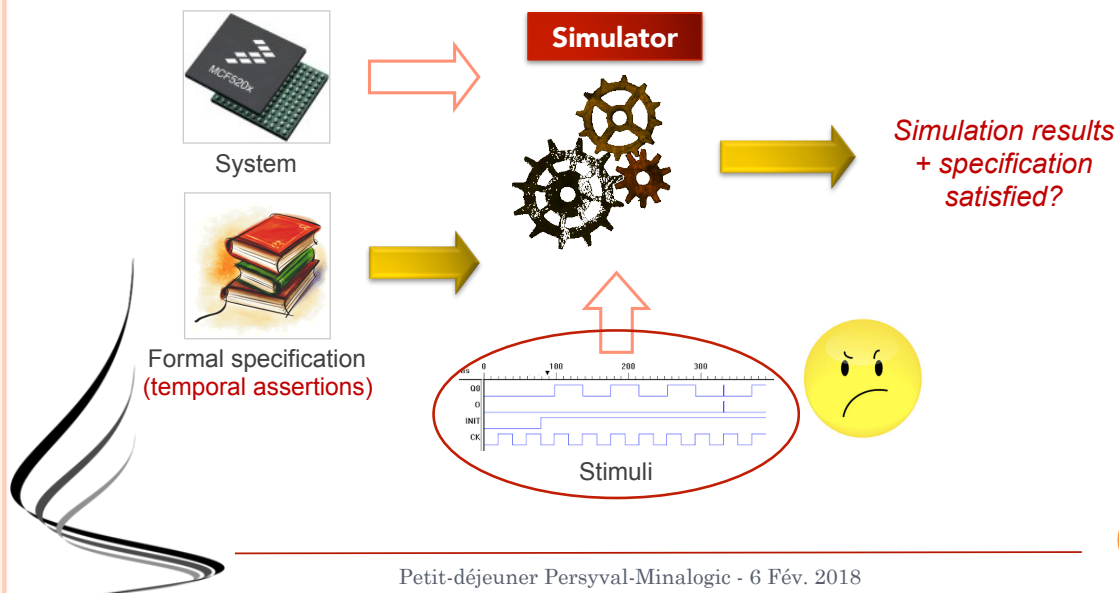


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VÉRIFICATION DYNAMIQUE

○ Vérification semi-formelle (HW, HW+SW, SW)

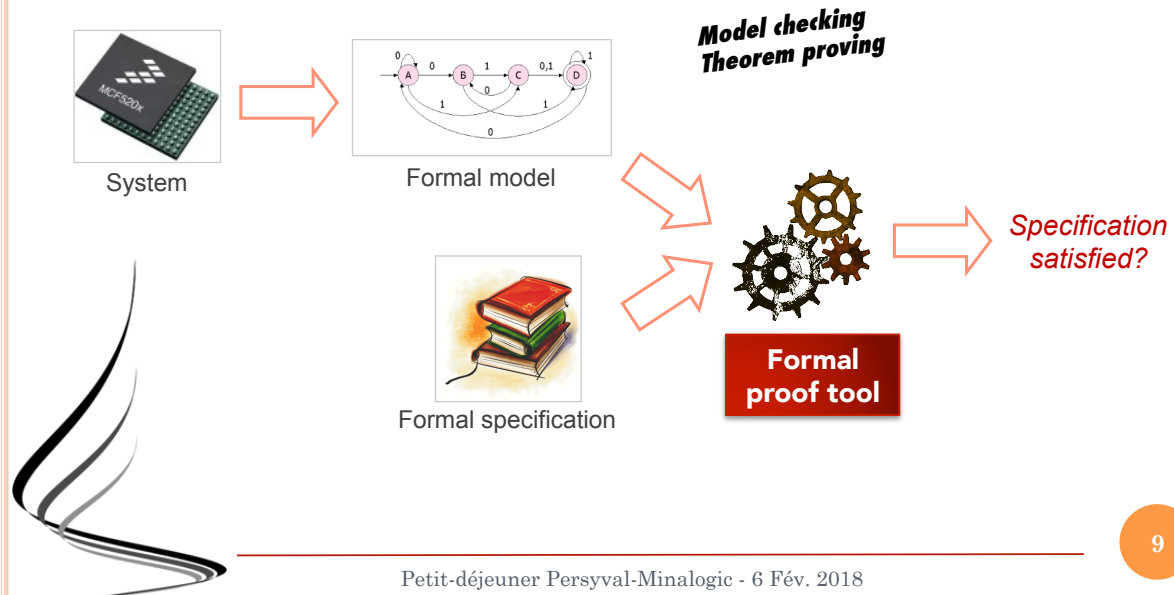


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VÉRIFICATION FORMELLE

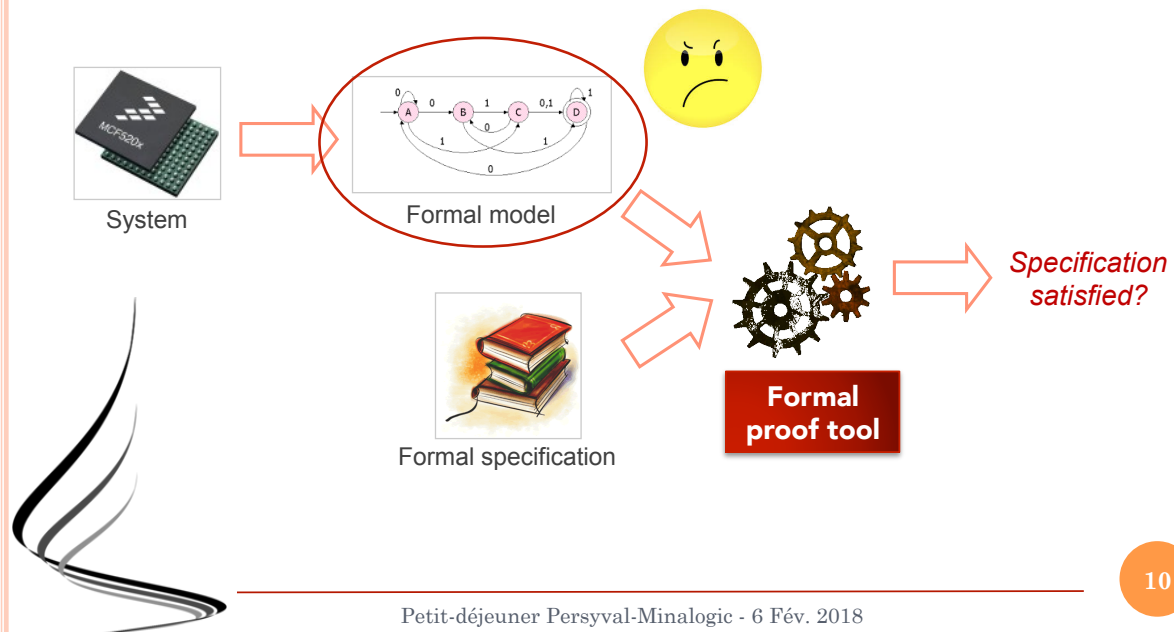
- Pas d'exécution/simulation (vérif. exhaustive)



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VÉRIFICATION FORMELLE

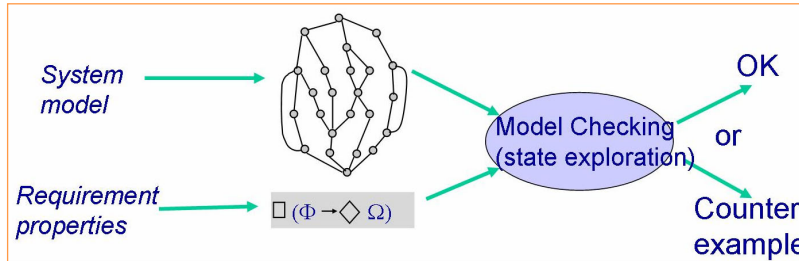
- Pas d'exécution/simulation (vérif. exhaustive)



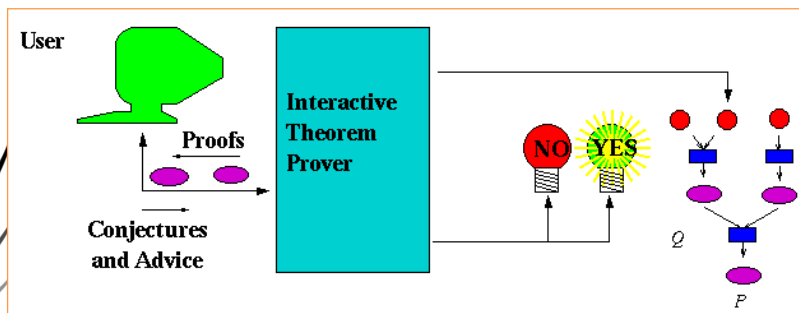
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VÉRIFICATION FORMELLE

Model checking vs theorem proving



**Algorithmique
(model checking)**



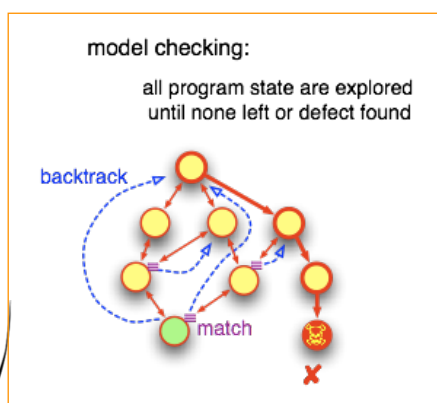
**Déductif
(theorem provers)**

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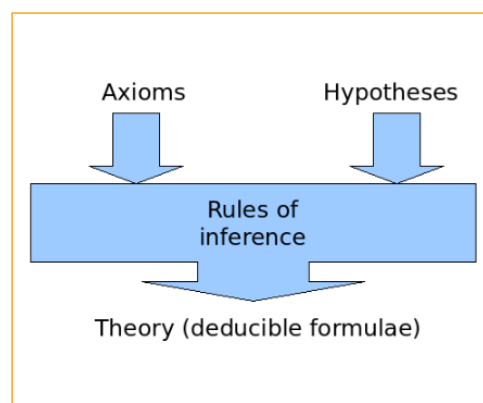
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VÉRIFICATION FORMELLE

Model checking vs theorem proving



**Algorithmique
(model checking)**



**Déductif
(theorem provers)**



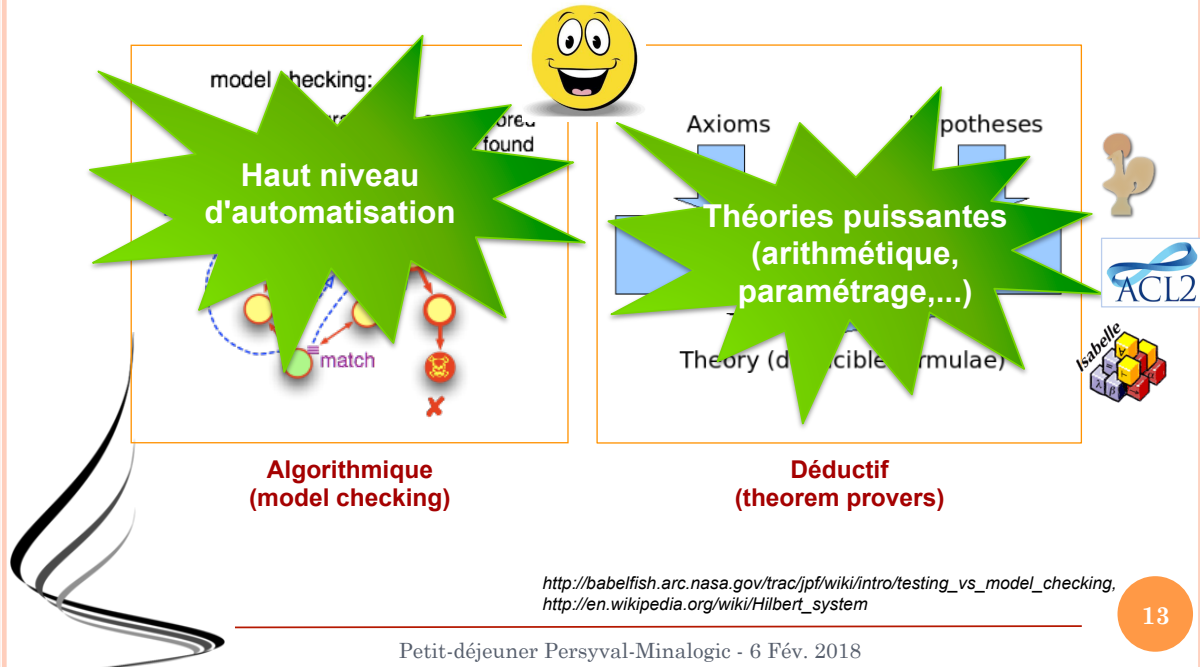
http://babelfish.arc.nasa.gov/trac/jpf/wiki/intro/testing_vs_model_checking,
http://en.wikipedia.org/wiki/Hilbert_system

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VÉRIFICATION FORMELLE

Model checking vs theorem proving



VÉRIFICATION FORMELLE

Model checking vs theorem proving

