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Analysing nets by the invariant method. (English) Zbl 0658.68068

Petri nets: central models and their properties, Proc. Adv. Course, Bad Honnef/FRG 1986, Lect. Notes Comput. Sci. 254, 300-336 (1987).

[For the entire collection see [Zbl 0619.00023](#).]

The authors emphasize the advantages of such a method: it works on out- of-context subnets and even on P/T-systems enriched with parameters (e.g., a predicate/transition system). The weighting vectors f (solutions of the linear system $f^T \cdot C = 0$) which generate the linear invariants are called semi-flows. The main results are: (i) the computation of the smallest set of the positive semi-flows (the Farkas algorithm), (ii) the computation of semi-flows for unary predicate transition systems, and (iii) the possibility to characterize all minimal supports of the set of positive semi-flows while the net contains some parameters. The results are illustrated by a well known concept: the general channel.

Reviewer: V.Calmatuianu

MSC:

- [68Q85](#) Models and methods for concurrent and distributed computing (process algebras, bisimulation, transition nets, etc.) Cited in 1 Document
- [68Q65](#) Abstract data types; algebraic specification
- [68N01](#) General topics in the theory of software

Keywords:

[invariant method](#); [Petri nets](#); [communicating processes](#); [predicate/transition system](#); [semi-flows](#)