A SEMIRING-SEMIMODULE GENERALIZATION OF TRANSDUCERS AND ABSTRACT ω-FAMILIES OF POWER SERIES [1]

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ABSTRACT

We introduce rational and algebraic transducers, and abstract ω-families of power series over quemirings and prove that rational and algebraic power series of finite and infinite words constitute such abstract ω-families of power series.

Keywords: ??

1. Introduction and Preliminaries

We continue the algebraic theory of Ésik, Kuich [7, 8, 9, 10] on semiring-module pairs and quemirings that is applicable to languages that contain finite and infinite words (see Büchi [2], Perrin, Pin [13]). The purpose of our paper is to give an algebraic approach independent of any alphabets and languages to rational and algebraic transducers and to abstract ω-families of languages.

The paper consists of this and three more sections. We assume the reader of this paper to be familiar with the definitions of Ésik, Kuich [7, 8, 9, 10]. Additional definitions are given at the end of this section.

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