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Absztrakt:  
We start with a short introduction into semirings and formal power series. Then we define weighted pushdown automata over complete semirings by labeled directed infinite graphs with a finitely defined structure that mirrors the LIFO (last in - first out) principle in connection with the pushdown tape. The acceptance is by empty tape and final state. We then define the infinite transition matrix of the weighted pushdown automaton which is nothing else than the adjacency matrix of the infinite graph.  

Then we turn to pushdown automata over power series semirings and show – as a generalization of the equivalence of classical pushdown automata and contextfree grammers – the equivalence of weighted pushdown automata and algebraic systems. The proof is a generalization of the wellknown triple construction and is much easier than the usual proofs.  

Eventually we discuss weighted restart pushdown automata that start with empty tape and accept again by emty tape and final state.  

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