

# Parse Tree in Context-Free Parallel Communicating Grammar Systems (PCGS)

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## **Abstract:**

Parallel Communicating Grammar Systems (PCGS) are formal language theoretic models of parallel and distributed computation. These grammars start from separate axioms, work synchronously (each component grammar uses one rewriting rule in each time unit, rewriting its own sentential form), and communicate by request. PCGS with context-free components (CF-PCGS) have high practical potential, especially in the area of formal methods. One of the most important constructs in the realm of context-free languages are the parse trees, they offer straightforward proofs of important results such as the pumping theorem. This presentation focuses on PCGSs, summarizes their features, and presents the concept of Parse Trees and Unique Queries in Context-Free PCGS .