A Generative Representation of Sampling-Based Visibility Algorithms

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There has been considerable research activity in the field of sampling-based visibility algorithms for the past 25 years. To achieve high performance, these algorithms have become very specialized to workloads and hardware domains. [why is this a problem]. We present a novel representation of the space of sampling-based visibility algorithms using notions of decomposition, bounds formation, bounds testing, and map-reduction as primitives. We also present a compiler capable of translating our representation to single-core code.