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Computation of Natural Logarithm Using Abstract Chemical Reaction Networks

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Abstract : Recent researches has focused on nucleic acids as a substrate for designing biomolecular circuits for in situ monitoring and control. A common approach is to express them by a set of idealised abstract chemical reaction networks (ACRNs). Here, we present new results on how abstract chemical reactions, viz., catalysis, annihilation and degradation, can be used to implement circuit that accurately computes logarithm function using the method of Arithmetic-Geometric Mean (AGM), which has not been previously used in conjunction with ACRNs.

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