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	authors	<ul style="list-style-type: none"><li>M. A. Nabian</li><li>H. Meidani</li></ul>	authors	<ul style="list-style-type: none"><li>Mohammad Amin Nabian</li><li>Hadi Meidani</li></ul>	DUPLICATES	64
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	abstract	In this paper, we propose the Adaptive Physics-Informed Neural Networks (APINNs) for accurate and efficient simulation-free Bayesian parameter estimation via Markov-Chain Monte Carlo (MCMC). We specifically focus on a class of parameter estimation problems for which computing the likelihood function requires solving a PDE. The proposed method consists of: (1) constructing an offline PINN-UQ model as an approximation to the forward model; and (2) refining this approximate model on the fly using samples generated from the MCMC sampler. The proposed APINN method constantly refines this approximate model on the fly and guarantees that the approximation error is always less than a user-defined residual error threshold. We numerically demonstrate the performance of the proposed APINN method in solving a parameter estimation problem for a system governed by the Poisson equation.	abstract	In this paper, we propose the Adaptive Physics-Informed Neural Networks (APINNs) for accurate and efficient simulation-free Bayesian parameter estimation via Markov-Chain Monte Carlo (MCMC). We specifically focus on a class of parameter estimation problems for which computing the likelihood function requires solving a PDE. The proposed method consists of: (1) constructing an offline PINN-UQ model as an approximation to the forward model; and (2) refining this approximate model on the fly using samples generated from the MCMC sampler. The proposed APINN method constantly refines this approximate model on the fly and guarantees that the approximation error is always less than a user-defined residual error threshold. We numerically demonstrate the performance of the proposed APINN method in solving a parameter estimation problem for a system governed by the Poisson equation.		
	versions		versions			