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	abstract	In this paper, we present linearized learning methods to accelerate the convergence of training for stationary nonlinear Navier-Stokes equations. To solve the stationary nonlinear Navier-Stokes (NS) equation, we integrate the procedure of linearization of the nonlinear convection term in the NS equation into the training process of multi-scale deep neural network approximation of the NS solution. Four forms of linearizations are considered. After a benchmark problem, we solve the highly oscillating stationary flows utilizing the proposed linearized learning with multi-scale neural network for complex domains. The results show that multiscale deep neural network combining with the linearized schemes can be trained fast and accurately.	**abstract**	In this paper, we present linearized learning methods to accelerate the convergence of training for stationary nonlinear Navier-Stokes equations. To solve the stationary nonlinear Navier-Stokes (NS) equation, we integrate the procedure of linearization of the nonlinear convection term in the NS equation into the training process of multi-scale deep neural network approximation of the NS solution. Four forms of linearizations are considered. After a benchmark problem, we solve the highly oscillating stationary flows utilizing the proposed linearized learning with multi-scale neural network for complex domains. The results show that multiscale deep neural network combining with the linearized schemes can be trained fast and accurately.		
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