

CRUNCH Seminars at Brown, Division of Applied Mathematics

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**Convergence of PINNs and hp-VPINNs for advection-
diffusion-reactions equations**

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Hp-variational physics-informed neural networks (hp-VPINNs) are based on minimization of residuals of equations in variational formulations. PINN and VPINN can be considered as special cases of hp-VPINN. We present a theoretical framework for the error estimates of hp-VPINN. In particular, we show how to obtain error estimates for PINN in this framework.