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Reinforcement Learning-Based Optimization of NuScale Power Module Fuel Assembly Design: A Novel Physics-Informed Approach Using Proximal Policy Optimization

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The research represents a groundbreaking application of artificial intelligence to nuclear fuel assembly optimization, specifically targeting the NuScale Small Modular Reactor design . The work addresses critical challenges in nuclear fuel cycle optimization by developing an automated, physics-informed reinforcement learning framework that significantly outperforms traditional optimization methods

Technical Track

Student Competition

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