



Canadian Association
of Physicists

Association canadienne
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Contribution ID: 4282 Type: **Poster not-in-competition (Graduate Student) / Affiche non-compétitive (Étudiant(e) du 2e ou 3e cycle)**

(G) (POS-4) Exploring Computational Physics Exercises as a Tool for Learning Physics

Tuesday, May 28, 2024 5:47 PM (2 minutes)

Over the past decade, physics education has increasingly emphasized computational skills for undergraduates. These skills offer many benefits, fostering problem-solving, analysis, and critical thinking applicable across various professions. This study delves into the relationship between computational activities and enhanced physics learning, specifically explored through coding exercises introduced in a second-year electricity and magnetism course. Students numerically computed vector derivatives for diverse fields, providing a basis for learning gains assessed through pre- and post-quizzes. Interviews with students during code development shed light on their thought processes, confidence levels, and alignment of computed results with their initial conceptions of vector fields.

Keyword-1

Computational Physics

Keyword-2

Pedagogy

Keyword-3

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Session Classification: DPE Poster Session & Student Poster Competition (3) | Session d'affiches DEP et concours d'affiches étudiantes (3)

Track Classification: Technical Sessions / Sessions techniques: Physics Education / Enseignement de la physique (DPE-DEP)