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## Dynamical Analysis in Generalized 4D Einstein-Gauss-Bonnet Gravity

We consider an extension of the novel 4D Einstein-Gauss-Bonnet (EGB) gravity by proposing a coupling between the scalar field and the Gauss-Bonnet term, which is otherwise absent in the novel 4D EGB theory, and demonstrate that the additional contributions to the equations of motion come from both the scaling of a coupling constant and the non-minimal coupling between the scalar field and gravity. By choosing the exponential functions for the potential and the coupling function to the Gauss-Bonnet term, we investigate the system's stability based on the fixed points and dynamical system approach. Our result shows that the system is not only stable but also can explain the late-time acceleration of the universe. However, stable accelerating solutions exist under specific conditions that the model parameters, including the potential parameter, must satisfy.

**Primary authors:** Dr SUNLY, Khimphun (Graduate School of Science, RUPP, Cambodia); RITHY, Phearun (Royal University of Phnom Penh); Dr GANSUKH, Tumurtushaa (Department of Science Education, JNU, Jeju, 63243, Korea)

**Presenter:** RITHY, Phearun (Royal University of Phnom Penh)

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