SUMMARY OF NEW CONCLUSIONS OF PHD THESIS

Title: **Some classes of degenerate nonlinear elliptic and hyperbolic equations**

Speciality: Integral and Differential Equations

Classification: 62 46 01 03

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Scientific Advisor: Prof. Dr. Sc. Nguyen Minh Tri, Institute of Mathematics.

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NEW CONCLUSIONS

- For semilinear degenerate elliptic boundary value problem: We prove the existence of weak solution of the problem under some conditions on nonlinear terms. We also prove the regularity of weak solutions of the problems.
- For damped hyperbolic equations containing strongly degenerate elliptic operators in bounded domain: We prove the existence and uniqueness of mild solutions, the existence of compact connected global attractor in $S^2_{(k_1,k_2),0}(\Omega) \times L^2(\Omega)$ and establish the finite fractal dimensionality of the attractor.
- For damped hyperbolic equations containing the Grushin operator in the whole space: We prove the existence and uniqueness of mild solutions and the existence of a global attractor in the spaces $S^2_k(\mathbb{R}^N) \times L^2(\mathbb{R}^N)$.

Scientific Advisor	PhD Student
Prof. Dr. Sc. Nguyen Minh Tri	**Duong Trong Luyen**