Information on Doctoral thesis of Fellows Nguyen Thu Thuy

1. Full name: Nguyen Thu Thuy

2. Sex: Female

3. Date of birth: 02- 02- 1980

4. Place of birth: Nam Dinh

5. Admission decision number: Number 2385/SĐH June 29, 2007 of the Vietnam National University Hanoi.

6. Changes in the academic process: no

7. Official thesis title: Some parallel Runge-Kutta-type methods for nonstiff IVPs.

8. Major: Numerical Mathematics

9. Code: 62 46 30 01

10. Supervisors: Prof. DrSc. Nguyen Huu Cong

11. Summary of the new findings of the thesis: The thesis proposes three class of numerical methods for nonstiff IVPs.

- Two-step-by-two-step PIRK-type PC methods based on Gauss-Legendre collocation points

- Parallel iterated pseudo two-step RK methods with stepsize control.

- Explicit pseudo three-step Runge-Kutta methods for nonstiff IVPs.

12. Paratical applicability, if any: The proposed methods can be applied in scientisic computing.

13. Further research directions, if any

- The study of other methods for ODE initial value problems.

- Extending these methods for delay differential equations system IVPs.

- Extending these methods for systems of second-order differential equations.

- Coding thesis algorithms for use on parallel computers.

14. Thesis-related publications:

[1] N.H. Cong and N.T. Thuy, “Two-step-by-two-step PIRK-type PC methods based on Gauss-Legendre collocation points”, *Journal of Computational and Applied Mathematics*, **236**(2011), 225-233. (SCI)

[2] N.H. Cong and N.T. Thuy, “Stability of Two-Step-by-Two-Step IRK methods based on Gauss-Legendre collocation points and an application”, *Vietnam Journal of Mathematics*, **40**(2012), no.1, 115-126

[3] N.H. Cong and N.T. Thuy, “Parallel iterated pseudo two-step RK methods with stepsize control”, *Japan Journal of Industrial and Applied Mathematics*, **31**, no.2, pp. 441-460. (SCI)

[4] N.H. Cong and N.T. Thuy, “A class of explicit pseudo three-step Runge-Kutta methods” (submitted).