Thursday, 6 April, 2017

09:00 Registration, tea and coffee, outside the O’Flaherty Theatre, Main Concourse, NUI Galway
09:50 Opening of the workshop by Rachel Quinlan, Head of the School of Mathematics, Statistics and Applied Mathematics (in AC201)

Session chair: Natalia Kopteva
10:00 Christos Xenophontos On the finite element approximation of fourth order singularly perturbed eigenvalue problems
10:25 Torsten Linß Collocation for singularly perturbed boundary-value problems
10:50 Stephen Russell A two-scale sparse grid method for a singularly perturbed reaction-diffusion problem in three dimensions

11:15 Tea and coffee break

Session chair: Martin Stynes
11:55 Simon Becher Uniform error estimates for general linear turning point problems on layer-adapted meshes
12:20 Sebastian Franz Exponentially graded meshes and singularly perturbed problems

12:45 Lunch in An Bhialann

Session chair: Maria Pickett
14:15 John J. H. Miller Tutorial on using MATLAB to solve singularly perturbed systems of initial value problems
14:40 Eugene O’Riordan Singularly perturbed convection-diffusion problems posed on an annulus
15:05 Alan F. Hegarty Numerical solution of convection-diffusion problems on annular and related domains

15:30 Tea and coffee break

Session chair: Christos Xenophontos
16:10 Vladimir Volkov Asymptotic-numerical method for the description of moving fronts in nonlinear two-dimensional reaction-diffusion models
16:35 Dmitry Lukyanenko Solving ill-posed problems for nonlinear singularly perturbed equations with internal and boundary layers

17:00 Organisational issues
18:30 Conference dinner, Viña Mara, 19 Middle St., Galway
### Friday, 7 April, 2017

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
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<tbody>
<tr>
<td>10:00</td>
<td>Martin Stynes</td>
<td>Supercloseness of continuous interior penalty method for convection-diffusion problems with characteristic layers</td>
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<tr>
<td>10:25</td>
<td>Catherine Timoney</td>
<td>Singularly perturbed nonlinear time-dependent parabolic problem with singularly perturbed Neumann boundary conditions</td>
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<td>10:50</td>
<td>Chad Westphal</td>
<td>Adaptively Weighted Finite Element Methods for PDE with Boundary Layers</td>
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<td>11:15</td>
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<td>Tea and coffee break</td>
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<tr>
<td>11:55</td>
<td>Nikolay Nefedov</td>
<td>Initial boundary value problems for Burgers equation with nonlinear forcing: front motion and blow-up</td>
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<tr>
<td>12:20</td>
<td>Natalia Kopteva</td>
<td>Fully computable a posteriori error estimator using anisotropic flux equilibration on anisotropic meshes</td>
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### Saturday, 8 April, 2017

There will be an excursion to the Burren and Cliffs of Moher, with stops including Dunguaire Castle, Poulnabrone Dolmen and Blackhead. The bus depart at 9am from the Quadrangle of NUI Galway, and return at 3pm.