

RBF2020 Computational Methods with Radial Basis Functions

Workshop at the ICCSA 2020 conference

Cagliari, Italy 1-4 July, 2020

Workshop Committee:

Vaclav Skala, University of West Bohemia, Czech Republic

[[WEB page](#)] [[Scopus ID](#)] [[WoS/Clarivate](#)]

agreements pending

Deadline: 2020-02-15 (on 2019-2-15)



Workshop Description

Computational methods based on Radial Basis Functions are a hot topic in engineering problems solution, generally in not only in computational sciences and numerical mathematics.

Standard computational methods used across many application fields require tessellation in 2D or 3D using triangular or tetrahedral meshes. Tessellation itself is computationally expensive especially in higher dimensions and the result of that computation is again discrete, and physical phenomena are not smoothly interpolated. Methods based on Radial Basis Functions (RBFs) are especially convenient for scattered data processing as they do not require a tessellation. They are used not only for interpolation and approximation, but also for solution of partial and ordinary differential equations, etc.

RBF methods are scalable to higher dimensions and offer smooth final representation and they lead to a solution of a system of linear equations, in general.

This RBF2020 workshop at the ICCSA 2020 conference is intended to explore broad computational applicability of the Radial Basis Functions across all computational fields.

The aim is also to connect computational applications with the latest theoretical research results, i.e. put together related advanced applications in computational sciences and latest related theory.

The accepted and presented papers are expected to be published in the ICCSA 2020 conference proceedings.

Main topics (but not limited to):

1. RBF methods in engineering problems
2. RBF methods and differential equations
3. RBF methods and GIS, CAD/CAM systems
4. RBF methods in theory and practice
5. RBF methods and computational and numerical issues
6. RBF interpolation and approximation methods for large scalar and vector data sets
7. RBF methods for scattered spatio-temporal data, t-varying systems etc.
8. Radial Basis Functions in computer graphics, visualization etc.
9. RBF methods in image processing and computer vision
10. RBF methods and projective space representation
11. Comparison of RBF and mesh based computational methods
12. Scattered data interpolation and approximation methods
13. RBF for a mesh morphing and data mapping
14. RBF methods for corrupted image reconstruction and inpainting removal
15. RBF methods applications in general

Important dates - please, see the ICCSA 2020 page at

- Submission via <https://ess.iccsa.org/cgi-bin/login.py>
- Paper submission 15 February 2020 (Currently 2020-02-15):

Detailed information

For detailed and updated information visit page:

<http://meshfree.zcu.cz/RBF2020/>

Meshfree Research Group at the University of West Bohemia

<http://meshfree.zcu.cz/>

Actual list of meshless/RBF related publications of our group:

<http://afrodita.zcu.cz/~skala/Publication-RBF.htm>

Contact

Prof. Vaclav Skala,

URL: <http://www.VaclavSkala.eu>

e-mail: meshfree2020@gmail.com subj. MESHFREE 2020

Head of the Center of Computer Graphics and Visualization <http://graphics.zcu.cz/>

c/o Department of Computer Science and Engineering

Faculty of Applied Sciences

University of West Bohemia, Plzen [Pilsen]

Czech Republic

Last update: 2019-10-12