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**Timur Akhunov\***, 4400 Vestal Pkwy, Binghamton, NY 13902, and **Lyudmilla Korobenko** and **Cristian Rios**. *When solutions of the Laplace equation are not smooth. How much degeneracy is needed?*

Pierre-Simon marquis de Laplace in his 5 volume *Traité de mécanique céleste* unified mathematical physics by placing calculus front and center. Among Laplace's chief innovations, was an introduction of a differential equation that now bears his name. Fast forward to the 20th century. Laplacian is crucial to understand the properties of light, heat, sound and atomic phenomena. Moreover, Einstein has pushed us to understand the Laplacian in the curved world, where some of the mathematicians' favorite toys no longer play as advertised. Come hear the story, where calculus, geometry and physics come together. (Received September 26, 2017)