PROCEEDINGS OF SCIENCE

Introducing the Lattice Virtual Academy (LaVA)

Claudio Bonanno,[a,*] **Maria Paola Lombardo**[b] **and Mike Peardon**[c]

[a] *Instituto de Física Téorica UAM-CSIC, Calle Nicolás Cabrera 13-15, Universidad Autónoma de Madrid, Cantoblanco, E-28049 Madrid, Spain*

[b] *INFN Sezione di Firenze, Via G. Sansone 1, I-50019 Sesto Fiorentino, Firenze, Italy*

[c] *School of Mathematics, Trinity College Dublin, Ireland*

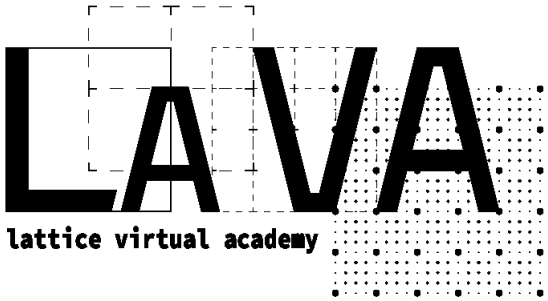
E-mail: claudio.bonanno@csic.es, mariapaola.lombardo@unifi.it, mjp@maths.tcd.ie

LaVA is a virtual platform for advanced e-learning and mixed learning in Lattice Field Theory and related areas which is under development within the STRONG-2020 project and supported by FBK and by the INFN communication office.

The 40th International Symposium on Lattice Field Theory (Lattice 2023)
July 31st – August 4th, 2023
Fermi National Accelerator Laboratory

*Speaker

PoS(LATTICE2023)109



LaVA is a virtual platform for advanced e-learning and mixed learning in Lattice Field Theory and related areas which is under development within the STRONG-2020 project and supported by FBK and by the INFN communication office.

The pandemic has lead to the production of a large collection of video material. Now that we are coming back to normality, we think that it is important that such legacy is not lost, but saved, collected and organized, including *ad-hoc* developed documents, for the benefit of the scientific community.

The goal of LaVA is to provide students and early-stage researchers with a wide collection of recorded video-lessons and written lecture notes that is able to give a thorough introduction to the main current research areas in Lattice Field Theory. Moreover, this platform will be important to improve diversity and inclusivity in our field: as a matter of fact, LaVA can help aspirant lattice practitioners from under-represented categories to enter the Lattice community.

Planned covered topics will include Lattice QCD in extreme conditions, precision flavor physics, lattice quantum simulations and machine learning applications to Lattice Field Theory.

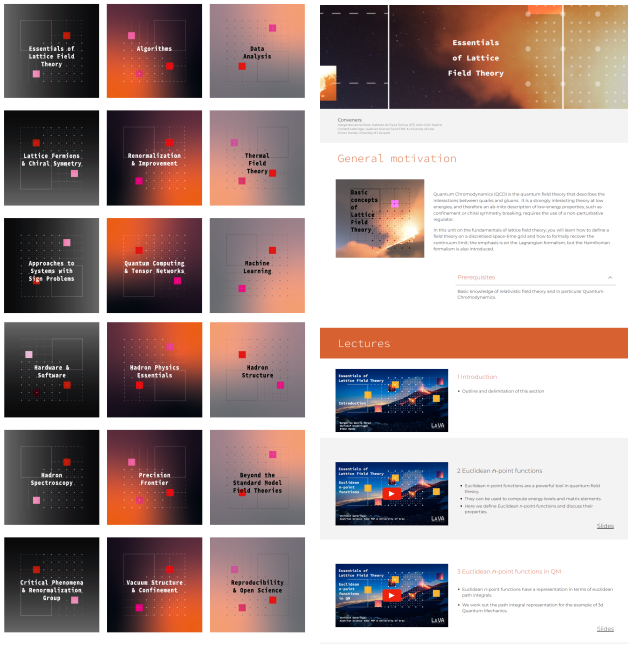
The LaVA Group and the convenors reunited in Trento at the ECT*, in the period Feb. 20$^{\text{th}}$ – 24$^{\text{th}}$ 2023, to discuss the organization of topics, their syllabi, and how to proceed to develop new material for the platform. All given presentations are publicly available at the Indico web-page of the workshop.

A preliminary Beta version of the `LaVA website` can be found here:

`https://sites.google.com/view/lattice-virtual-academy`

Note, however, that this URL is temporary and will be migrated in the near future.

At the present stage this web-page is still preliminary. However, the process of populating the website with material has already begun, starting from the "**Essentials of Lattice Field Theory**" section, which is at a pretty advanced stage. There, the conveners **Margarita García Peréz**, **Christof Gattringer**, and **Simon Hands**, have already recorded and uploaded new introductory video-lectures, complemented by lecture notes.



The section is introduced by means of a short paragraph, synthesizing learning goals and prerequisites, while recorded lectures are organized by means of a syllabus of topics. In this particular case, the "snippet" format was found to be particularly effective, given the introductory nature of "Essentials". Each video lecture is complemented by short lecture notes. The materal will be uploaded online by means of the Open Science Zenodo platform.

Moreover, the conveners also gathered some pre-exixting publicly-available material that could be retrieved online about introducing Ph. D. students to Lattice Field Theory, in the form of books, other lecture notes, or other recorded material from other training activities (e.g., Ph. D. schools).

Everyone is welcome to join and contribute to LaVA, and we are happy to receive comments, suggestions, or feedback. To reach out with LaVA we have created the "lava@ectstar.eu" mailing list.

Acknowledgments

It is a pleasure to thank all the colleagues who have participated so far in the development of LaVA. We thank FBK/ECT* for the kind hospitality and for helping in the organization of the first LaVA meeting. LaVA is developed in the framework of STRONG-2020. STRONG-2020 has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No. 824093. The LaVA website is being developed with the support of INFN and of FBK/ECT*.