

NuPECC Long Range Plan 2024*

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The Nuclear Physics European Collaboration Committee (NuPECC) [1] hosted by the European Science Foundation represents today a large nuclear physics community from twenty three countries, three ESFRI (European Strategy Forum for Research Infrastructures) nuclear physics infrastructures and ECT* (European Centre for Theoretical Studies in Nuclear Physics and Related Areas), as well as from four associated members and ten observers. One of the major objectives of the Committee is: " ...on a regular basis, the Committee shall organise a consultation of the community leading to the definition and publication of a Long Range Plan (LRP) of European nuclear physics. " .

To this aim, NuPECC launched the preparation for the new LRP in May 2022 [2]. The bottom-up approach to the LRP, was strengthened by launching an open call for input. The received 159 contributions, submitted by more than 400 individual scientists, collaborations, research infrastructures, and institutions in Europe composed a solid basis for the further analysis and elaboration of the LRP by 11 Thematic Working Groups (TWG). The TWG covered a large set of topics relevant to the development of nuclear physics namely, Hadron Physics Properties of Strongly Interacting Matter at Extreme Conditions of Temperature and Baryon Number Density, Nuclear Structure and Reaction Dynamics, Nuclear Astrophysics, Symmetries and Fundamental Interactions, Applications and Societal Benefits, Research Infrastructures, Nuclear Physics Tools - Detectors and Experimental Techniques, Nuclear Physics Tools - Machine Learning, Artificial Intelligence, and Quantum Computing, Open Science and Data and Nuclear Science - People and Society.

Two working meetings were held at GSI/FAIR in Darmstadt, Germany in October 2023 and in February 2024. The purpose of the first meeting was to draft the LRP recommendations, and the second meeting was dedicated to finalizing the LRP chapters. A draft of the full LRP2024 was presented and discussed with the nuclear physics community at a dedicated three-day Town Meeting in Bucharest, Romania in April 2024. The more than 300-page LRP 2024 document including recommendations of the LRP was approved by NuPECC at its meeting in June 2024 in Lund, Sweden.

The Executive Summary of the LRP2024 can be found at [3].

The presentation will focus on the findings and recommendations of the NuPECC LRP2024.

References

- [1] <https://nupecc.org> .
- [2] <https://nupecc.org/?display=lrp2024/main> .
- [3] https://www.nupecc.org/lrp2024/Draft_Executive_Summary_LRP2024.pdf .

* This work coordinated by NuPECC was accomplished by a large European nuclear physics community.