

# Frontiers of Quantum Metrology for New Physics Searches

Bad Honnef Physics School, Physikzentrum Bad Honnef, May 11 - 16, 2025

|             | Su. May 11                  | Mo. May 12           | Tue. May 13    | Wed. May 14    | Thu. May 15          | Fri. May 16  |
|-------------|-----------------------------|----------------------|----------------|----------------|----------------------|--------------|
| 7:30-9:00   |                             | Breakfast            |                |                |                      |              |
| 9:00-10:30  |                             | P. Schmidt           | E. Fuchs       | E. Cornell     | A. Wickenbrock       | S. Rajendran |
| 10:30-11:00 |                             | Coffee break         |                |                |                      |              |
| 11:00-12:30 |                             | N. Gaaloul           | P. Schmidt     | A. Wickenbrock | H. Müller            | H. Müller    |
| 12:30-14:00 |                             | Lunch and coffee/tea |                |                |                      |              |
| 14:00-15:30 | Arrival                     | I. Pikovsky          | E. Cornell     | Excursion      | S. Ospelkaus         | Departure    |
| 15:30-16:00 |                             | Coffee break         |                |                | Coffee break         |              |
| 16:00-17:15 |                             | M. Safronova         | Poster Session |                | Groups Presentations |              |
| 17:15-18:30 |                             | M. Safronova         |                |                |                      |              |
| 18:30       | Dinner                      | Dinner               |                |                | Dinner               |              |
| 19:30       | Welcome and opening lecture |                      |                |                |                      |              |

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|--------------------|----------------------------------------------------------------------------------------|
| Marianna Safronova | Opening lecture: why new Physics and intro to school project + DM searches with clocks |
| Arne Wickenbrock   | Magnetometry & applications                                                            |
| Naceur Gaaloul     | Atom interferometry & GWD applications                                                 |
| Silke Ospelkaus    | dipolar molecules                                                                      |
| Piet Schmidt       | Quantum logic clocks & applications                                                    |
| Eric Cornell       | Electron Dipole Moment                                                                 |
| Igor Pikovsky      | Quantum Gravity / Graviton                                                             |
| Holger Müller      | Fine structure constant determination + cavity atom interferometry                     |
| Elina Fuchs        | Dark matter / Dark Energy                                                              |
| Surjeet Rajendran  | Gravity and quantum mechanics tests                                                    |