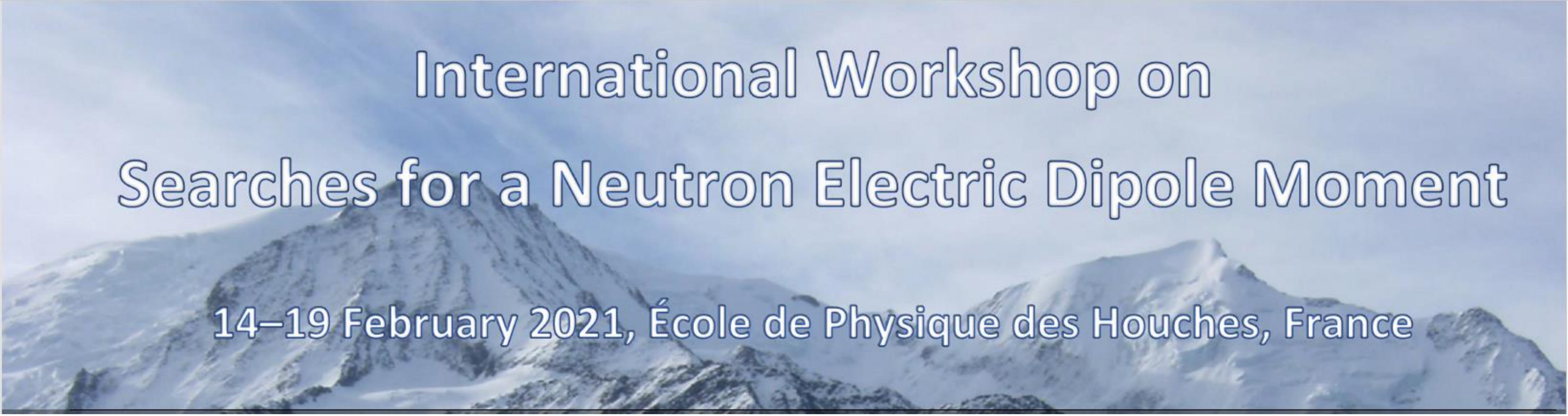


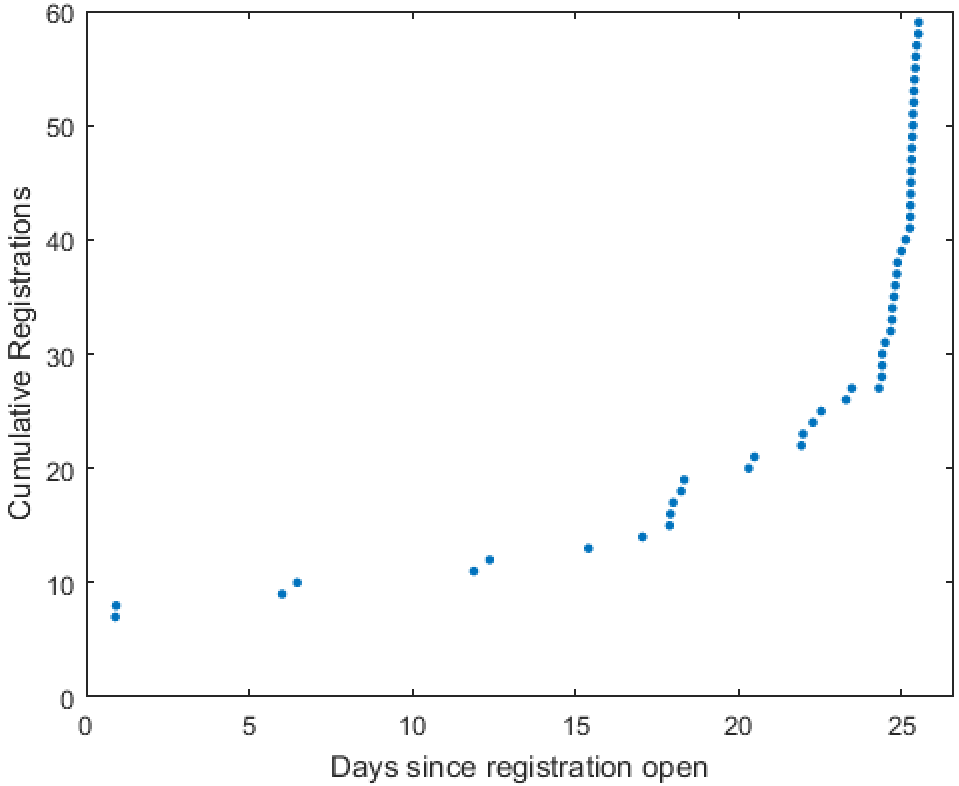
Special thanks to:

- Audrey Colas (LPSC)
- Laurence Tellier (ILL)
- Jianqi Chen (LPC Caen)
- Thomas Bouillaud (LPSC)
- Chen-Yu Liu (Indiana)
- Our Lecturers! (watch their videos…)

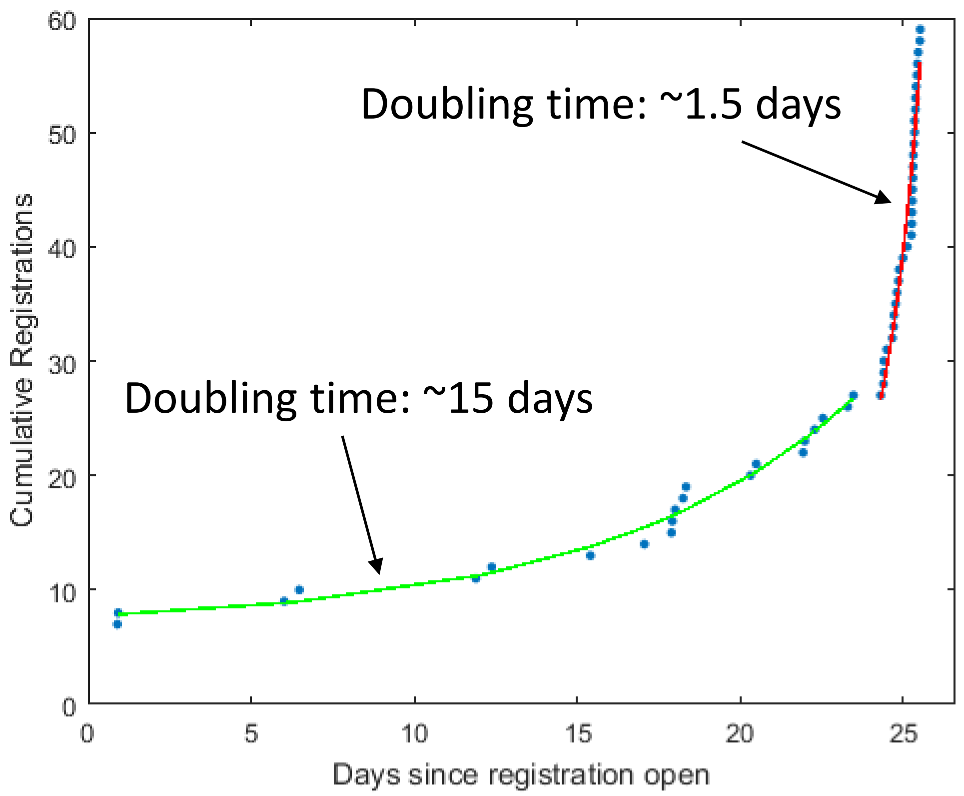
Recorded videos: https://www.youtube.com/channel/UCZOq5QlVvGpIjIx4I4fEg-Q/featured
Jobs in the field: https://lpsc-indico.in2p3.fr/event/2584/page/266-nedm-jobs

Organizers: Skyler Degenkolb, Guillaume Pignol, Stéphanie Roccia
Advisory Committee: Brad Filippone, Thomas Lefort, Chen-Yu Liu, and Rüdiger Picker

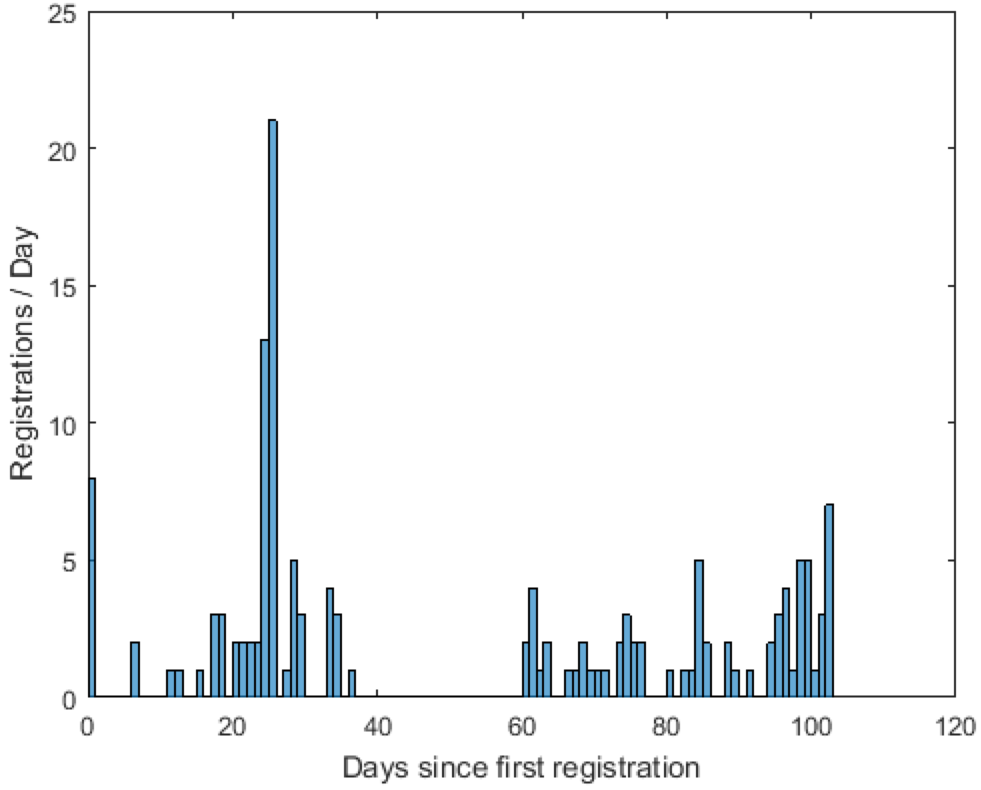
Statistics and exponential growth



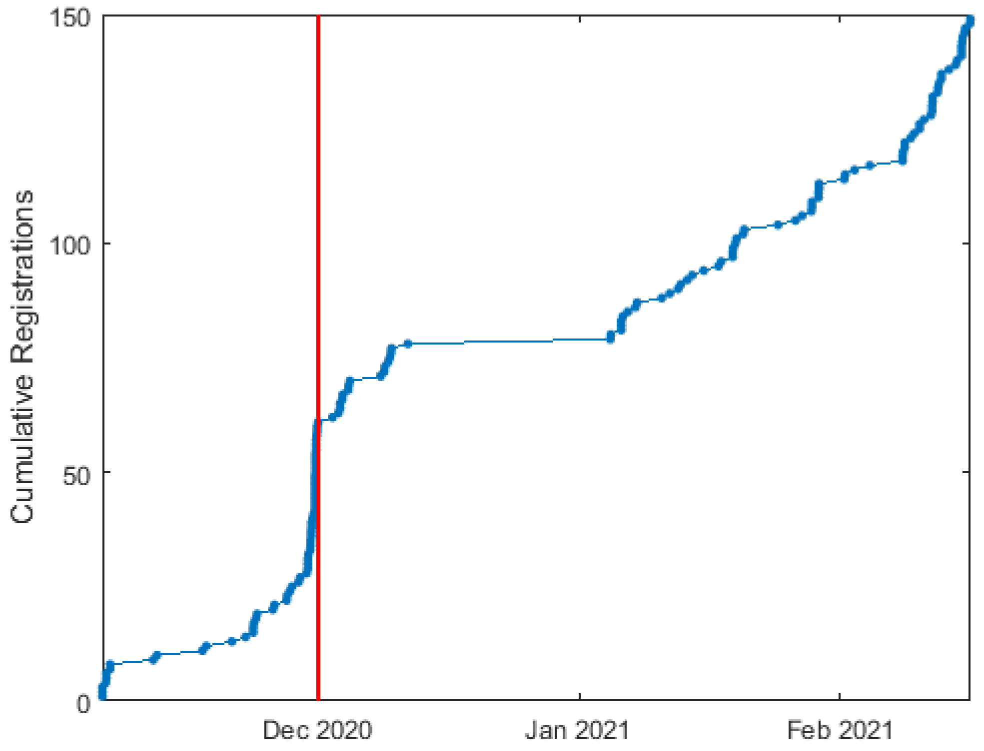
Statistics and **double**-exponential growth

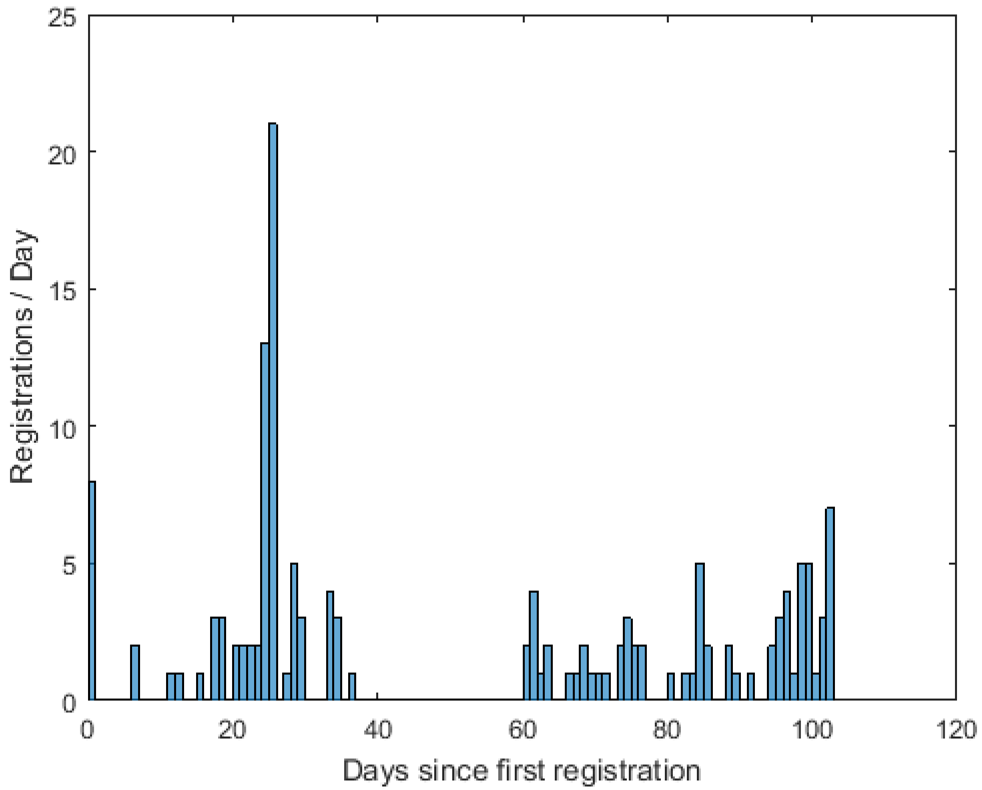


Statistics and exponential growth

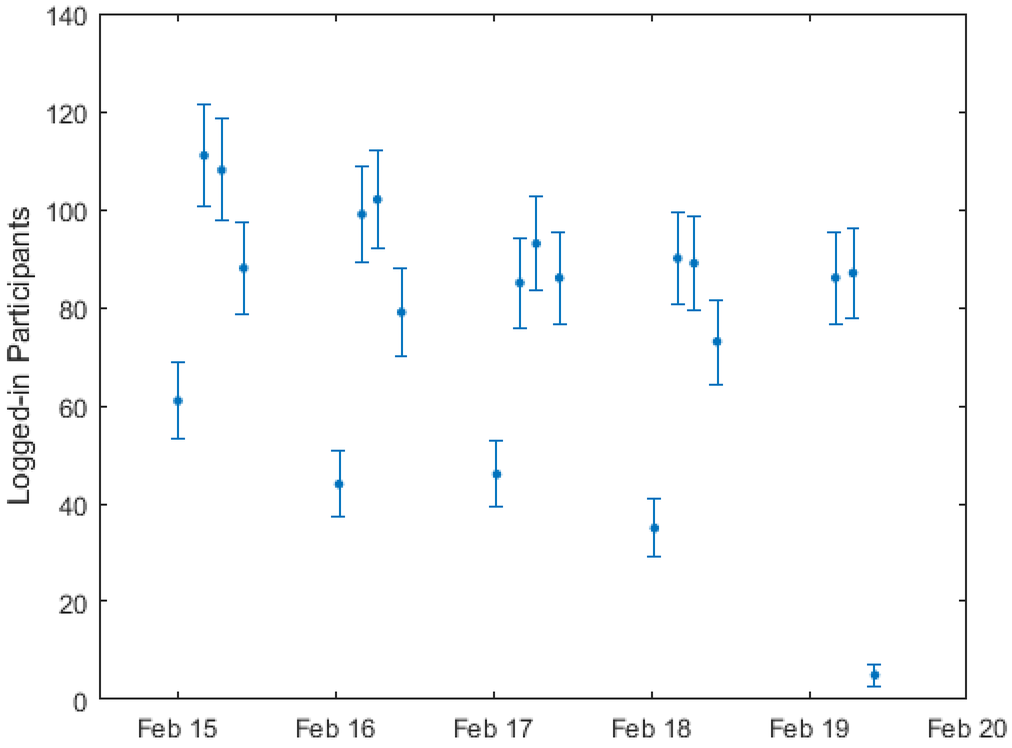


Statistics and exponential growth

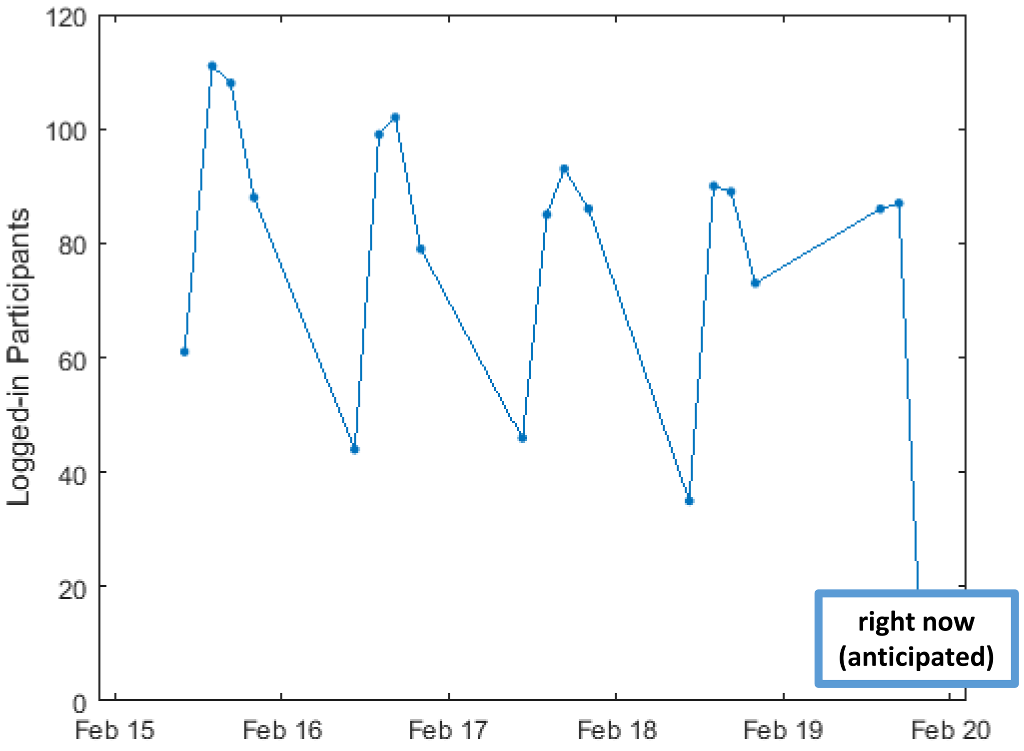


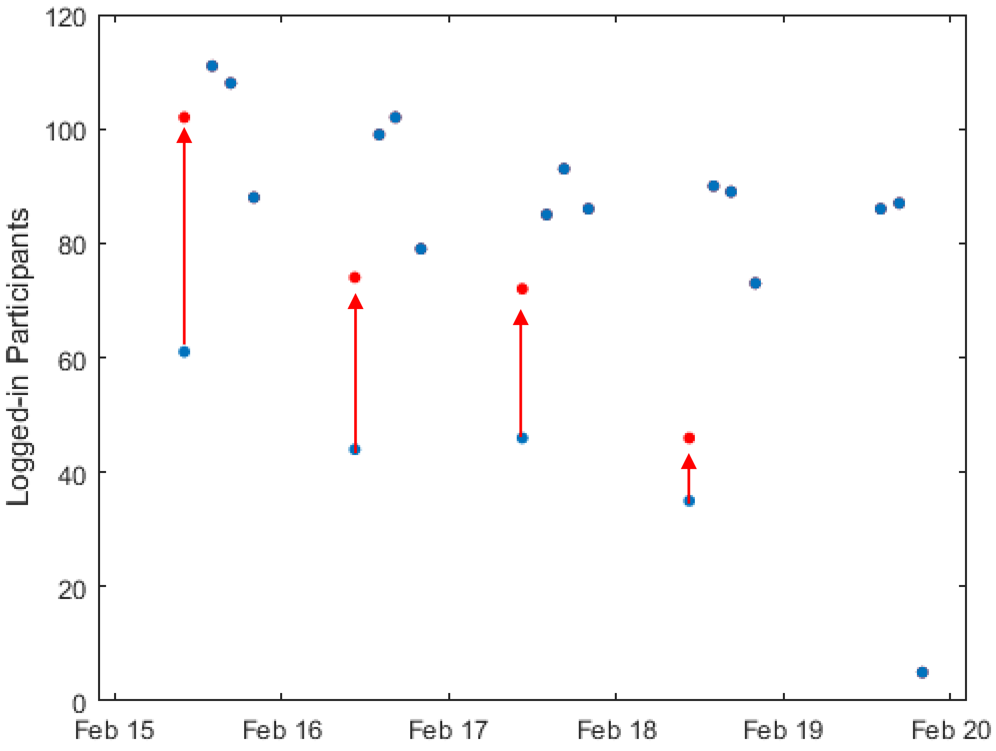


Session attendance (statistical resolution)



Session attendance (sytematic errors)





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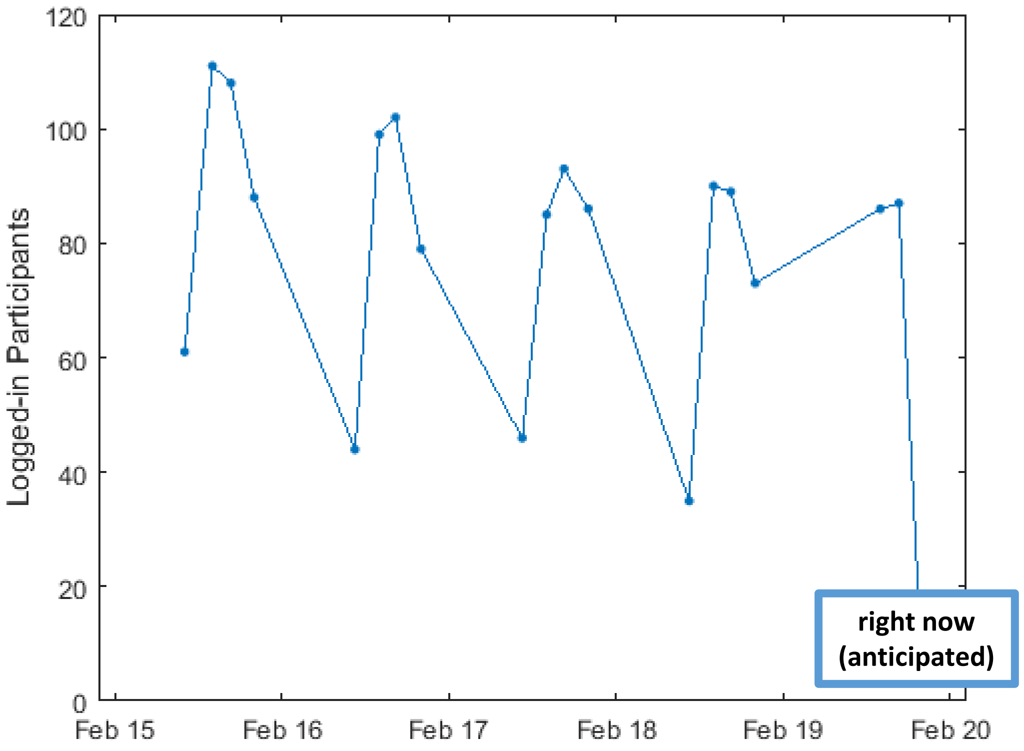

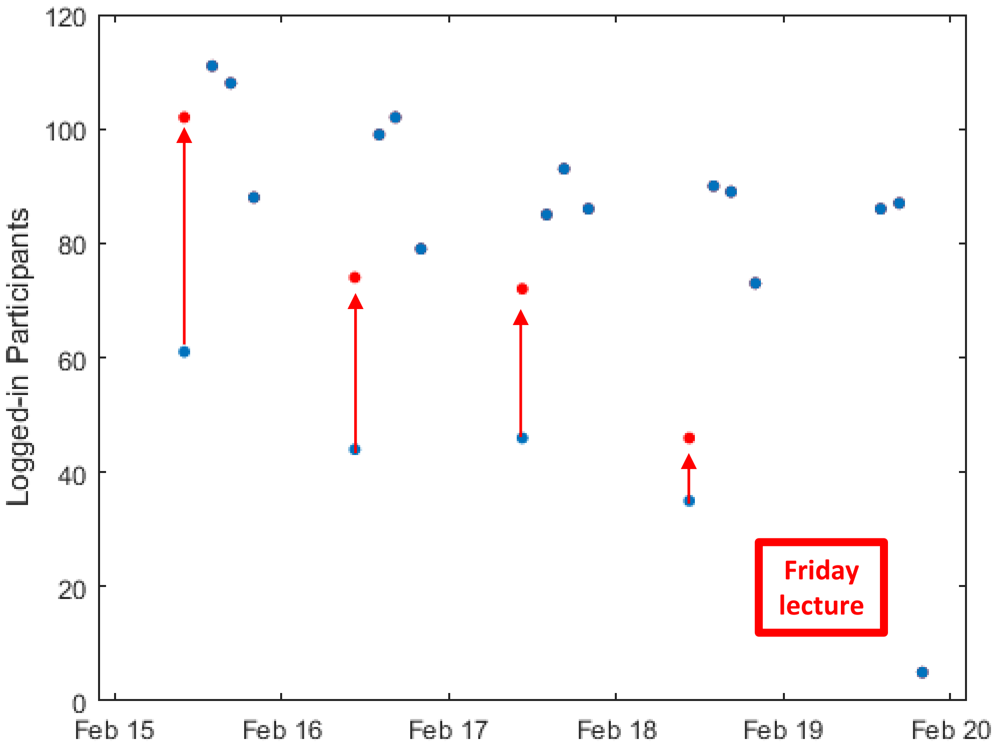

PART I.- NON RELATIVISTIC THEORY (INCLUDING SPIN).

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a) No spin

Let us consider the Schrödinger equation

$$- i\hbar \frac{\partial}{\partial t} \psi (t) + H \psi (t) = 0 \qquad (1)$$

Now, consider $\psi(-t)$. It satisfies the equation

$$+ i\hbar \frac{\partial}{\partial t} \psi(-t) + H \psi (-t) = 0 \qquad (2)$$

TIME REVERSAL

Conférences données par le

Professeur W. PAULI

à l'Ecole d'Eté de Physique Théorique

Les Houches, Haute-Savoie (France)

Eté 1952

PART I.- NON RELATIVISTIC THEORY (INCLUDING SPIN).

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It is necessary to investigate the properties of the Pauli matrices, under complex conjugations. It is easy to show that the component of $\vec{\sigma}^*$ have the same commutation relations as those of $-\vec{\sigma}$ therefore, there exist a <u>unitary</u> matrix ω such that

$$\vec{\sigma}^* = \omega(-\vec{\sigma})\omega^{-1} \qquad (10)$$

In the usual representation of the σ's, ω is equal to σ_y wich satisfies

$$\omega\omega^* = -1 \qquad (11)$$

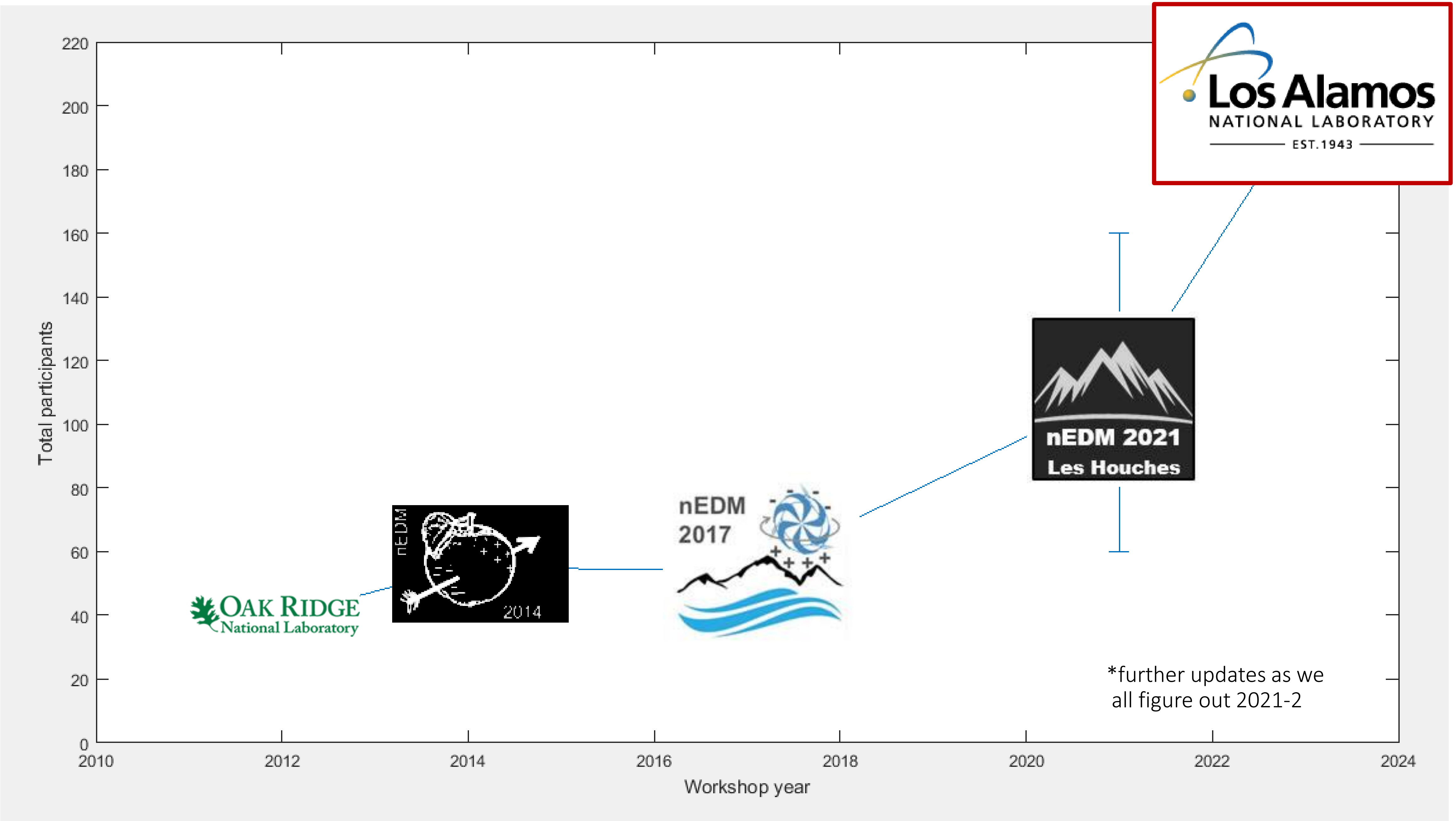
$$\begin{pmatrix} & 1 \\ 1 & \end{pmatrix} \quad \begin{pmatrix} & -i \\ i & \end{pmatrix} \quad \begin{pmatrix} 1 & \\ & -1 \end{pmatrix}$$

- "Pauli matrices" from Pauli
- Operator equations (not pictures)

- Kramers theorem
- Cf. CPT (and L. Covi lecture)

For a system of interacting particles in the absence of external magnetic field, each energy level is at least doubly degenerate if the number of particles of spin 1/2 is <u>odd</u>.

nEDM2023 at LANL (hopefully!)*



*further updates as we all figure out 2021-2