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Estimating molecular ground-state energies with Rydberg arrays

Janas is a startup that uses quantum computing technologies and techniques to solve today's industrial problems. In the NISQ settings, we think that only a hybrid approach with the right mix of conventional high performance computing (the specialty of our parent company eXact lab), machine learning and quantum processing can provide an edge in the near term. We further claim that quantum simulation provides a more reliable platform until error corrected digital quantum computing will become available.

We show the computation of the ground state energy of small molecules on neutral-atom quantum computing platforms, comparing the digital and analog paradigms. The smart arrangement of the register makes the analog drive competitive with digital quantum computing.

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Authors: VARUTTI, Giovanni (University of Trieste, eXact lab S.r.l.); NESPOLO, Jacopo (eXact lab s.r.l., Janas s.r.l.)

Co-author: ZENI, Severino (eXact lab s.r.l., Janas s.r.l.)

Presenter: VARUTTI, Giovanni (University of Trieste, eXact lab S.r.l.)