

# Theoretical Quantum Physicist (CNRS & Université de Strasbourg)

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## Personal details

Name: Johannes Schachenmayer

Languages: English, French (intermediate), German (native)

## Scientific education & career

- **Since Oct. 2016:**  
*Chargé de recherche (CRCN, CNRS, Sec. 4), IPCMS & ISIS/CESQ, Université de Strasbourg, France*
- **June 2013 - Sept. 2016:**  
*Postdoctoral Fellow, JILA, University of Colorado & NIST, Boulder, USA (Group of A. M. Rey)*
- **May 2011 - May 2013:**  
*Doctoral Research Scholar, University of Pittsburgh, USA (Group of A. J. Daley)*
- **Apr. 2009 - Dec. 2012:**  
*Doctoral student, Universität Innsbruck, Austria (Group of P. Zoller)*

## Diplomas

- **Degree:** Habilitation à diriger des recherches (HDR, 12. Nov. 2019)  
**Institution:** Université de Strasbourg
- **Degree:** Doktor der Naturwissenschaften (Dr. rer. nat., PhD degree, 20. Dec. 2012)  
**Institution:** Universität Innsbruck, Austria
- **Degree:** Diplom-Physiker Univ. (Dipl.-Phys. Univ., 5 year Master's degree, 4. Nov. 2008)  
**Institution:** Technische Universität München (TUM), Germany

## Summary: publications & talks

- **46 publications:** Nature Materials (1), Nature Comm. (3), Phys. Rev. X (2), Phys. Rev. Lett. (10), ACS Photonics (1), New. J. Phys. (5), Phys. Rev. A/B (15), Springer book chapter (1), ...
- **~ 3k citations, h-index: 26** (Google scholar, Jan. 2023)
- **50+ visits** to international conferences/research groups, **30+ invited talks/seminars**

## Research Grants & Prizes

- **ITI QMAT 2022 (PI):** PhD research grant, 135k€, “Cavity-coupled chemistry: A Quantum many-body physics Approach (CavQA)”  
Starting 2022 (funding for 3-year PhD project)
- **Research Prize:** Prix espoirs de l'Université de Strasbourg, 10k€, Sep. 2021
- **ECOS Sud (PI):** Bilateral network grant (France – Chile)  
Project: “Quantum dynamics in cavity-coupled molecules - numerical simulations and applications”  
Jan. 2021–Dec. 2023 (funding for exchange visits)
- **International Emerging Action (IEA) (PI):** Bilateral network grant (France – Chile)  
Project: “Quantum many-body dynamics in cavity-coupled molecules”  
Jan. 2021–Dec. 2022 (funding for exchange visits & meetings)

- **QUSTEC 2019 (PI)**: PhD research grant  
Project: “*Semi-classical modelling of open quantum technology platforms*”  
Feb. 2020–Feb. 2024 (funding for 4-year PhD project)
- **LabEx NIE 2018 (PI)**: PhD research grant  
Project: “*Novel approaches to quantum many-body dynamics in molecular complexes*”  
Sep. 2018–Sep. 2021 (funding for 3-year PhD project)
- **IdEx 2017 Attractivité (PI)**: research grant, 107k€  
Project: “*Simulation of transport in engineered many-body quantum systems*” (STEMQuS)  
Oct. 2017–Dec. 2018
- **ANR AAPG2022** (partner): Collaborative research grant, “*Cavity-mediated long-range interactions for multiparticle entanglement and quantum simulation*” (CLIMAQS)  
2022–2026, PI: J. Reichel (LKB Paris)
- **EquipEx+**: large-scale interdisciplinary infrastructure grant  
Project: “*Atomic quantum computing as a service*” (aQCess)  
2021–2028, PI: S. Whitlock (ISIS/UNISTRA)
- **FAPESP** (partner): grant for visiting PhD student (from São Paulo, Brazil)  
Project: “*Blockade effects with light-mediated dipole-dipole interactions*”  
Sep. 2017–Mar. 2018, PI: R. Bachelard (São Paulo, Brazil)
- **QuantERA 2018** (partner): research grant  
Project: “*Towards Room Temperature Quantum Technologies*” (ROUTE)  
2018–2021, PI: T. Ebbesen (ISIS/UNISTRA)
- **Computational grants**: HPC UNISTRA CPU hours [ $\sim$  5M hours 2018–2022]

## Supervision of students and post-docs

- **PhD student**: Guillermo Preisser, Feb. 2020–Feb. 2024 (QUSTEC grant)
- **PhD student**: David Wellnitz Oct. 2018–Feb. 2022 (LabEx NIE grant)
- **Post-doc**: Stefan Schütz, Oct. 2017–Sep. 2018 (IdEx Attractivité grant)
- **Visiting PhD student**: Tiago Santiago do Espirito Santo, Sep. 2017–Mar. 2018 (with R. Bachelard)
- **PhD students (co-supervision)**:  
V. Srivastava (2020–2024, with G. Pupillo); T. Ley, (2021–2023 with P. Collet),
- **Master students** (F. Salas Ramirez 2023, R. Daraban 2023, A. Kasri 2021, G. Percebois 2019)

## Teaching activities

- **Atomic physics 2019–2023** (Université de Strasbourg, Master 1)
- **Many-body physics 2018–2023** (Université de Strasbourg, Master 2)

## Advisory activities

- **Grant panel member**: FFG Austria (2022), National Science Centre Poland (2022, 2023)
- **Reviewer for faculty hirings**: European Science Foundation (2021)
- **Reviewer for research grants**: National Science Centre Poland, Île-de-France grants (SIRTEQ, QUANTIP), University of Trento (Italy), ...
- **Referee for scientific journals**: IOP Trusted Reviewer Award 2022, Nature Communications, Phys. Rev. X, Phys. Rev. Lett., IOP QST, New J. Phys., Phys. Rev. A/B, EPJ, SciPost, ...
- **Industry**: Scientific advisor, QuantFI SAS (start-up in quantum finance, Paris, Jan. 2021–Sept. 2022)

## Other responsibilities & activities

- **Conference Organization**  
EGAS 54, Strasbourg, June 18-22, 2023 (egas54.org)  
CECAM workshop Paris, June 28-30, 2023 (cecam.org/workshop-details/1214)
- **PhD committees**  
Rapporteur: A. Dunnett, Sorbonne Université, Paris, supervisor: A. Chin, 2021  
Member of several local PhD committees: M. Morgado, C. Le Calonnec, A. Catalano.
- **Invited mentor:** “Quantum Ideas Factory”, Heidelberg, 2022
- **QMAT** graduate school supervisor
- **Referent d’axe** “Correlations quantiques”, GDR “gaz quantiques”
- **Public outreach:** Interview about quantum computing in University newspaper, “Savoirs 42”
- **Data Management Officer of CESQ**
- **Admin of homepages:** schachenmayer.fr, qmtheory.fr, egas54.org

## List of publications

All articles are openly available as pre-prints under: [https://arxiv.org/a/schachenmayer\\_J\\_1.html](https://arxiv.org/a/schachenmayer_J_1.html) 

- [1] “Comparing bipartite entropy growth in open-system matrix product simulation methods”  
G. Preisser, D. Wellnitz, T. Botzung, and **J. Schachenmayer**  
arXiv:2303.09426 (2023)
- [2] “Multifractality in the interacting disordered Tavis-Cummings model”  
F. Mattiotti, J. Dubail, D. Hagenmüller, **J. Schachenmayer**, J.-P. Brantut, and G. Pupillo  
arXiv:2302.14718 (2023)
- [3] “Rise and fall, and slow rise again, of operator entanglement under dephasing”  
D. Wellnitz, G. Preisser, V. Alba, J. Dubail, and **J. Schachenmayer**  
Phys. Rev. Lett. 129, 170401 (2022)
- [4] “Entanglement dynamics in spin chains with structured long-range interactions”  
G. S. Bentsen, A. J. Daley, and **J. Schachenmayer**  
Invited book chapter: “Entanglement in Spin Chains – Theory and Quantum Technology Applications”,  
(Springer, 2022)
- [5] “Disorder enhanced vibrational entanglement and dynamics in polaritonic chemistry”  
D. Wellnitz, G. Pupillo, and **J. Schachenmayer**  
Commun. Phys. 5, 120 (2022).
- [6] “Large Random Arrowhead Matrices: Multifractality, Semi-Localization, and Protected Transport in Disordered Quantum Spins Coupled to a Cavity”  
J. Dubail, T. Botzung, **J. Schachenmayer**, G. Pupillo, and D. Hagenmüller  
Phys. Rev. A 105, 023714 (2022)
- [7] “A quantum optics approach to photoinduced electron transfer in cavities”  
D. Wellnitz, G. Pupillo, and **J. Schachenmayer**  
J. Chem. Phys. 154, 054104 (2021)
- [8] “Dark state semilocalization of quantum emitters in a cavity”  
T. Botzung, D. Hagenmüller, S. Schütz, J. Dubail, G. Pupillo, and **J. Schachenmayer**  
Phys. Rev. B 102, 144202 (2020)
- [9] “Photon blockade with ground-state neutral atoms”  
A. Cidrim, T. S. do Espirito Santo, **J. Schachenmayer**, R. Kaiser, and R. Bachelard  
Phys. Rev. Lett. 125, 073601 (2020)
- [10] “Adiabatic preparation of entangled, magnetically ordered states with cold bosons in optical lattices”  
A. Venegas-Gomez, **J. Schachenmayer**, A. S. Buyskikh, W. Ketterle, M. L. Chiofalo, and A. J. Daley  
Quantum Science and Technology 5, 045013 (2020)

- [11] “*Collective Dissipative Molecule Formation in a Cavity*”  
D. Wellnitz, S. Schütz, S. Whitlock, **J. Schachenmayer**, and Guido Pupillo  
Phys. Rev. Lett. 125, 193201 (2020)
- [12] “*Adiabatic elimination for ensembles of emitters in cavities with dissipative couplings*”  
D. Hagenmüller, S. Schütz, G. Pupillo, C. Genes, and **J. Schachenmayer**  
Phys. Rev. A 101, 013617 (2020)
- [13] “*Dynamics of rotated spin states and magnetic ordering with two-component bosonic atoms in optical lattices*”  
A. Venegas-Gomez, A. S. Buyskikh, **J. Schachenmayer**, W. Ketterle, and Andrew J. Daley  
Phys. Rev. A 102, 023321 (2020)
- [14] “*Collective Excitation Dynamics of a Cold Atom Cloud*”  
T. S. do Espirito Santo, P. Weiss, A. Cipris, R. Kaiser, W. Guerin, R. Bachelard, and **J. Schachenmayer**  
Phys. Rev. A 101, 013617 (2020) (Editors’ Suggestion)
- [15] “*Ensemble-induced strong light-matter coupling of a single quantum emitter*”  
S. Schütz, **J. Schachenmayer**, D. Hagenmüller, V. Sandoghdar, T. W. Ebbesen, C. Genes, and G. Pupillo  
Phys. Rev. Lett. 124, 113602 (2020)
- [16] “*Exploring Superconductivity under Strong Coupling with the Vacuum Electromagnetic Field*”  
A. Thomas, E. Devaux, K. Nagarajan, T. Chervy, M. Seidel, D. Hagenmüller, S. Schütz, **J. Schachenmayer**,  
C. Genet, G. Pupillo, and T. W. Ebbesen  
arXiv:1911.01459 (2019)
- [17] “*Collective Multi-mode Vacuum Rabi Splitting*”  
W. Guerin, T. S. do Espirito Santo, P. Weiss, A. Cipris, **J. Schachenmayer**, R. Kaiser, and R. Bachelard  
Phys. Rev. Lett. 123, 243401 (2019).
- [18] “*Doublon dynamics of Bose-Fermi mixtures in optical lattices*”  
M. Gärttner, A. Safavi-Naini, **J. Schachenmayer**, and A. M. Rey  
Phys. Rev. A 100, 053607 (2019)
- [19] “*A generalized phase space approach for solving quantum spin dynamics*”  
B. Zhu, A. M. Rey, and **J. Schachenmayer**  
New J. Phys. (Fast Track Communication) 21, 082001 (2019)
- [20] “*Enhancement of the electron-phonon scattering induced by intrinsic surface plasmon-phonon polaritons*”  
D. Hagenmüller, **J. Schachenmayer**, C. Genet, T. W. Ebbesen, and G. Pupillo  
ACS Photonics 6, 1073 (2019)
- [21] “*Out-of-equilibrium quantum magnetism and thermalization in a spin-3 many-body dipolar lattice system*”  
S. Lepoutre, **J. Schachenmayer**, L. Gabardos, B. Zhu, B. Naylor, E. Marechal, O. Gorceix, A. M. Rey,  
L. Vernac, and B. Laburthe-Tolra  
Nature Communications 10, 1714 (2019)
- [22] “*Cavity-assisted mesoscopic transport of fermions: Coherent and dissipative dynamics*”  
D. Hagenmüller, S. Schütz, **J. Schachenmayer**, C. Genes, and G. Pupillo  
Phys. Rev. B 97, 205303 (2018)
- [23] “*Exploring many body localization and thermalization using semiclassical method*”  
O. L. Acevedo, A. Safavi-Naini, **J. Schachenmayer**, M. L. Wall, R. Nandkishore, and A. M. Rey  
Phys. Rev. A 96, 033604 (2017)
- [24] “*Cavity-enhanced transport of charge*”  
D. Hagenmüller, **J. Schachenmayer**, S. Schütz, C. Genes, and G. Pupillo  
Phys. Rev. Lett. 119, 223601 (2017)
- [25] “*Laser noise imposed limitations of ensemble quantum metrology*”  
D. Plankensteiner, **J. Schachenmayer**, H. Ritsch, and C. Genes  
J. Phys. B 49, 245501 (2016)
- [26] “*Spin-orbit coupled correlated metal phase in Kondo lattices: an implementation with alkaline-earth atoms*”  
L. Isaev, **J. Schachenmayer**, and A. M. Rey  
Phys. Rev. Lett. 117, 135302 (2016)
- [27] “*Doublon dynamics and polar molecule production in an optical lattice*”  
J. P. Covey, S. A. Moses, M. Gärttner, A. Safavi-Naini, M. T. Miecnikowski, Z. Fu, **J. Schachenmayer**,

- P. S. Julienne, A. M. Rey, D. S. Jin, and J. Ye  
Nature Communications 7, 11279 (2016)
- [28] “*Collective atomic scattering and motional effects in a dense coherent medium*”  
S. L. Bromley, B. Zhu, M. Bishof, X. Zhang, T. Bothwell, **J. Schachenmayer**, T. L. Nicholson, R. Kaiser, S. F. Yelin, M. D. Lukin, A. M. Rey, and J. Ye  
Nature Communications 7, 11039 (2016)
- [29] “*Entanglement growth and correlation spreading with variable-range interactions in spin and fermionic tunnelling models*”  
Anton S. Buyskikh, Maurizio Fagotti, **J. Schachenmayer**, Fabian Essler, and A. J. Daley  
Phys. Rev. A 93, 053620 (2016)
- [30] “*Adiabatic cooling of bosons in lattices to magnetically ordered quantum states*”  
**J. Schachenmayer**, D. M. Weld, H. Miyake, G. A. Siviloglou, A. J. Daley, and W. Ketterle  
Phys. Rev. A 92, 041602(R) (2015)
- [31] “*Synchronization of interacting quantum dipoles*”  
B. Zhu, **J. Schachenmayer**, M. Xu, F. Herrera, J. G. Restrepo, M. J. Holland, and A. M. Rey  
New J. Phys. 17 083063 (2015)
- [32] “*Dynamics of correlations in two-dimensional spin models with long-range interactions: A phase-space Monte-Carlo study*”  
**J. Schachenmayer**, A. Pikovski, and A. M. Rey  
New J. Phys. 17, 065009 (2015)
- [33] “*Cavity-enhanced transport of excitons*”  
**J. Schachenmayer**, C. Genes, E. Tignone, and G. Pupillo  
Phys. Rev. Lett. 114, 196403 (2015)
- [34] “*Conductivity in organic semiconductors hybridized with the vacuum field*”  
E. Orgiu, J. George, J. A. Hutchison, E. Devaux, J. F. Dayen, B. Doudin, F. Stellacci, C. Genet, **J. Schachenmayer**, C. Genes, G. Pupillo, P. Samori, T. W. Ebbesen  
Nature Materials 14, 1123–1129 (2015)
- [35] “*The local density of states on a vibrational quantum dot out of equilibrium*”  
K. F. Albrecht, A. Martin Rodero, **J. Schachenmayer**, L. Mühlbacher  
Phys. Rev. B 91, 064305 (2015)
- [36] “*Many-body quantum spin dynamics with Monte-Carlo trajectories on a discrete phase space*”  
**J. Schachenmayer**, A. Pikovski, and A. M. Rey  
Phys. Rev. X 5, 011022 (2015)
- [37] “*Thermalization of strongly interacting bosons after spontaneous emissions in optical lattices*”  
**J. Schachenmayer**, L. Pollet, M. Troyer and A. J. Daley  
EPJ Quantum Technology, 2:1 (2015)
- [38] “*Light scattering and dissipative dynamics of many fermionic atoms in an optical lattice*”  
S. Sarkar, S. Langer, **J. Schachenmayer**, and A. J. Daley  
Phys. Rev. A 90, 023618 (2014)
- [39] “*Suppressing the loss of ultracold molecules via the continuous quantum Zeno effect*”  
B. Zhu, B. Gadway, M. Foss-Feig, **J. Schachenmayer**, M. Wall, K. R. A. Hazzard, B. Yan, S. A. Moses, J. P. Covey, D. S. Jin, J. Ye, M. Holland, and A. M. Rey  
Phys. Rev. Lett. 112, 070404 (2014)
- [40] “*Spontaneous emissions and thermalization of cold bosons in optical lattices*”  
**J. Schachenmayer**, L. Pollet, M. Troyer, and A. J. Daley  
Phys. Rev. A 89, 011601(R) (2014)
- [41] “*Entanglement growth in quench dynamics with variable range interactions*”  
**J. Schachenmayer**, B. P. Lanyon, C. F. Roos, and A. J. Daley  
Phys. Rev. X 3, 031015 (2013)
- [42] “*Heating dynamics of bosonic atoms in a noisy optical lattice*”  
H. Pichler, **J. Schachenmayer**, A. J. Daley, and P. Zoller  
Phys. Rev. A 87, 033606 (2013)



- [43] “Noise- or disorder- resilient optical lattices”  
H. Pichler, **J. Schachenmayer**, J. Simon, P. Zoller, and A. J. Daley  
Phys. Rev. A 86, 051605(R) (2012)
- [44] “Measuring entanglement growth in quench dynamics of bosons in an optical lattice”  
A. J. Daley, H. Pichler, **J. Schachenmayer**, and P. Zoller  
Phys. Rev. Lett. 109, 020505 (2012)
- [45] “Atomic matter-wave revivals with definite atom number in an optical lattice”  
**J. Schachenmayer**, A. J. Daley, and P. Zoller  
Phys. Rev. A 83, 043614 (2011)
- [46] “Dynamical crystal creation with polar molecules or Rydberg atoms in optical lattices”  
**J. Schachenmayer**, I. Lesanovsky, A. Micheli, and A. J. Daley  
New J. Phys. 12, 103044 (2010)
- [47] “Time-dependent currents of 1D bosons in an optical lattice”  
**J. Schachenmayer**, G. Pupillo, and A. J. Daley  
New J. Phys. 12, 025014 (2010)

## Selected talks

1. *Invited talk*, Conference, MQT 2022, Dec. 12–Dec. 16, 2022, Puerto Natales, Chile  
Title: *Exploring the role of entanglement in disordered polaritonic chemistry*
2. *Invited talk*, Conference, CoScaLi 2022, Oct. 09–Oct. 14, 2022, Porquerolles, France  
Title: *‘Entanglement’ as resource for computing quantum many-body dynamics in cold atoms and beyond*
3. *Invited discussion leader*, CECAM flagship workshop: Local vs. Collective Interactions in Polaritonic Chemistry, Jun. 22–24, Bordeaux, France  
Topic: *“Classical vs. Quantum” Regimes of Light-Matter Strong Coupling*
4. *Talk*, Conference: APS DAMOP Meeting, May. 30–Jun 3, 2022, Orlando, Florida, USA  
Title: *“The rise and fall, and slow rise again, of operator entanglement under dephasing”*
5. *Invited talk*, Séminaire matière condensée, LPS Mar. 24, 2022, Saclay, France  
Title: *Dynamics of “entanglement” in ensembles of cold atoms or molecules out of equilibrium*
6. *Invited talk*, Conference, CoScaLi 2021, Sep. 12–Sep. 17, 2021, Porquerolles, France  
Title: *Collective dynamics of “molecules” in a cavity*
7. *Invited talk*, KITP Conference: Transport & Efficient Energy Conversion in Quantum Systems, Aug. 30–Sep. 2, 2021, Santa Barbara, CA, USA (held online)  
Title: *Modified transport properties of dark eigenstates under strong light-matter coupling*
8. *Invited talk*, Conference: Quantum simulations of molecular energy transport (CEFIPRA Symposium), Nov. 30–Dec. 1, 2020, IISER Bhopal, India (held online)  
Title: *Transport and localization properties of dark states under strong light-matter coupling*
9. *Invited talk*, Conference: CoOLMe 2020 (GdR atomes froids), Nov. 16–18, 2020, (held online)  
Title: *Entanglement dynamics and quantum thermalization with ultracold chromium atoms*
10. *Invited talk*, Conference: Long Range Interacting Quantum Systems (French-German WE-Heraeus seminar), Sep. 21–25, 2020, Bad Honnef, Germany (held online)  
Title: *Localization properties of dark eigenstates under strong light-matter coupling*
11. *Talk*, Conference: Molecular Quantum Technology 2019, Dec. 16–20, 2019, Puerto Natales, Chile  
Title: *The Fate of Anderson Localization Under Strong Coupling*
12. *Invited talk*, Conference: Atoms and photons 2019, Nov. 5–7, 2019, Nice, France  
Title: *The Fate of Anderson Localization Under Strong Coupling*
13. *Invited talk*, Conference: Quantum and Classical Systems with Long-Range Interactions, Jul. 15–19, 2019, Natal, Brazil  
Title: *Dynamics in dipolar lattice systems: A semi-classical perspective on entanglement build-up and thermalization*
14. *Invited talk*, Conference: Molecular Polaritonics 2019, Jul. 7–11, 2019, Miraflores de la Sierra, Spain  
Title: *Numerical simulations of ultra-cold atom experiments: Applications to molecular polaritonics?*

15. *Invited talk*, Colloquium: International Max Planck Research School, Mar. 21, 2019, Erlangen, Germany  
Title: *Thermalization in quantum spin models: A semi-classical perspective*
16. *Invited talk*, Seminar: Theory of Quantum Matter Group, ENS Lyon, Jan. 24, 2019, Lyon, France  
Title: *Dynamics of correlations and thermalization of dipolar quantum spin models: A semi-classical perspective*
17. *Invited talk*, Seminar: Institute for Molecular Science (IMS), Dec. 13, 2018, Okazaki, Japan  
Title: *Quantum thermalization in a spin-3 many-body model in an optical lattice*
18. *Invited talk*, Seminar: Computational Nonlinear & Quantum Optics Group, University of Strathclyde, Sep. 14, 2018, Glasgow, Scotland, UK  
Title: *Entanglement build-up and thermalization with Chromium atoms in an optical lattice*
19. *Invited talk*, Seminar: Max Planck Institute for the Science of light (MPL), Jul. 3, 2018, Erlangen, Germany  
Title: *Semi-classical approaches to many-body spin-dynamics*
20. *Invited talk*, CQD Colloquium, Physikalisches Institut, Universität Heidelberg, May. 16, 2018, Germany  
Title: *Semi-classical numerical approaches to many-body spin-dynamics*
21. *Invited talk*, Seminar: Theoretical Chemistry Group, UCSD, Mar. 11, 2018, San Diego, USA  
Title: *Semi-classical numerical approaches to many-body spin-dynamics*
22. *Invited talk*, Seminar: Groupe de Physique Statistique, Université de Lorraine, Feb. 8, 2018, Nancy, France  
Title: *Exploring dynamics and entanglement in quantum many-body lattice systems*
23. *Invited talk*, Conference: Entangled Interacting Quantum Matter (ENIQMA), Nov. 27-28, 2017, Lille, France  
Title: *Simulating quantum many-body dynamics with discrete Wigner functions*
24. *Invited talk*, Seminar: FOTONIKA-LV, Latvijas Universitate, Oct. 26, 2017, Riga, Latvia  
Title: *Phase-space dynamics of quantum many-body models*
25. *Invited talk*, OSA Latin America Optics & Photonics Conference, Aug. 22–25, 2016, Medellín, Colombia  
Title: *Exploring Quantum Many-Body Spin Dynamics with Truncated Wigner Methods*
26. *Invited talk*, Conference: CoScaLi 2016, May. 9–12, 2016, Ubatuba, Brazil  
Title: *Collective atomic emission and its interplay with motional effects*
27. *Invited talk*, Conference: APS March Meeting, Mar. 14–18, 2016, Baltimore, Maryland, USA  
Title: *Exploring Quantum Many-Body Spin Dynamics with Truncated Wigner Methods*
28. *Invited talk*, Conference: ICAM Energy Transport Workshop 2015, Dec. 14–16, 2015, Boulder, Colorado, USA  
Title: *Cavity and vacuum field effects on exciton and charge transport in organic semiconductors*
29. *Invited talk*, Seminar: Departamento de Física, Universidad de Santiago de Chile, Oct. 14, 2015  
Title: *Numerical computations of quantum many-body dynamics & Cavity-assisted transport*
30. *Invited talk*, Seminar: Institut für Theoretische Physik (ITP), Aug. 17, 2015, Innsbruck, Austria  
Title: *The discrete truncated Wigner approximation & Cavity enhanced transport*
31. *Talks*, Conference: APS DAMOP Meeting, Jun. 8–12, 2015, Columbus, Ohio, USA  
Title: *“Transport dynamics in quantum lattice models and the discrete truncated Wigner approximation”*  
Title: *“Novel phase-space Monte-Carlo method for quench dynamics in 1D and 2D spin models”*
32. *Invited talk*, Conference: Frontiers in Optics/Laser Science 2014, Oct. 19–24, 2014, Tucson, Arizona, USA  
Title: *Simulating many-body dynamics in systems of cold atoms, molecules, and ions*
33. *Talk*, Conference: APS DAMOP Meeting, Jun. 2–6, 2014, Madison, Wisconsin, USA  
Title: *“The truncated Wigner approximation for spin dynamics in systems of trapped ions, atoms & molecules”*
34. *Talk*, Conference: APS March Meeting, Mar. 3–7, 2014, Denver, Colorado, USA  
Title: *“Spin dynamics and entanglement growth with trapped ions, atoms & molecules”*
35. *Talk*, Conference: APS DAMOP Meeting Jun. 3–7, 2013, Quebec City, Quebec, Canada  
Title: *“Dynamical entanglement creation and measurement with cold atoms or ions”*
36. *Talk*, Conference: APS March Meeting, Mar. 18–22, 2013, Baltimore, Maryland, USA  
Title: *“Spin dynamics and entanglement growth with trapped ions, atoms & molecules”*
37. *Talk*, APS March Meeting, Mar. 29–31, 2012, Boston, Massachusetts, USA  
Title: *“Cold bosons in noisy optical lattices”*