

Co-authored book

- [1] J. Peters, D. Janzing, and B. Schölkopf. *Elements of Causal Inference – Foundations and Learning Algorithms*. MIT Press, 2017.

Articles in peer-reviewed conference proceedings

- [1] Elias Eulig, Atalanti A. Mastakouri, Patrick Blöbaum, Michaela Hardt, and Dominik Janzing. Toward falsifying causal graphs using a permutation-based test. In *Proceedings of the 39th Annual AAAI Conference on Artificial Intelligence*, 2025.
- [2] Philipp M. Faller, Leena Chennuru Vankadara, Atalanti A. Mastakouri, Francesco Locatello, and Dominik Janzing. Self-compatibility: Evaluating causal discovery without ground truth. AISTATS, 2024.
- [3] D. Janzing, P. Blöbaum, A. Mastakouri, P.M. Faller, L. Minorics, and K. Budhathoki. Quantifying indirect causal influence via structure preserving interventions. AISTATS, 2024.
- [4] Yuchen Zhu, Kailash Budhathoki, Jonas Kuebler, and Dominik Janzing. Meaningful causal aggregation and paradoxical confounding. CLeaR, 2024.
- [5] Francesco Montagna, Atalanti A. Mastakouri, Elias Eulig, Nicoletta Noceti, Lorenzo Rosasco, Dominik Janzing, Bryon Aragam, and Francesco Locatello. Assumption violations in causal discovery and the robustness of score matching. NeurIPS 2023, 2023.
- [6] Bijan Mazaheri, Atalanti Mastakouri, Dominik Janzing, and Mila Hardt. Causal information splitting: Engineering proxy features for robustness to distribution shifts. In *Proceedings of UAI 2023*, 2023.
- [7] Luigi Gresele, Julius Von Kügelgen, Jonas Kübler, Elke Kirschbaum, Bernhard Schölkopf, and Dominik Janzing. Causal inference through the structural causal marginal problem. In Kamalika Chaudhuri, Stefanie Jegelka, Le Song, Csaba Szepesvari, Gang Niu, and Sivan Sabato, editors,

Proceedings of the 39th International Conference on Machine Learning, volume 162 of *Proceedings of Machine Learning Research*, pages 7793–7824. PMLR, 17–23 Jul 2022.

- [8] Paul Rolland, Volkan Cevher, Matthäus Kleindessner, Chris Russell, Dominik Janzing, Bernhard Schölkopf, and Francesco Locatello. Score matching enables causal discovery of nonlinear additive noise models. In Kamalika Chaudhuri, Stefanie Jegelka, Le Song, Csaba Szepesvari, Gang Niu, and Sivan Sabato, editors, *Proceedings of the 39th International Conference on Machine Learning*, volume 162 of *Proceedings of Machine Learning Research*, pages 18741–18753. PMLR, 17–23 Jul 2022.
- [9] Yonghan Jung, Shiva Kasiviswanathan, Dominik Janzing, Patrick Blöbaum, and Bareinboim Elias. *do*-shapley: Towards causal interpretation of model prediction. In *ICML 2022*.
- [10] Kailash Budhathoki, Lenon Minorics, Patrick Bloebaum, and Dominik Janzing. Causal structure-based root cause analysis of outliers. In Kamalika Chaudhuri, Stefanie Jegelka, Le Song, Csaba Szepesvari, Gang Niu, and Sivan Sabato, editors, *Proceedings of the 39th International Conference on Machine Learning*, volume 162 of *Proceedings of Machine Learning Research*, pages 2357–2369. PMLR, 17–23 Jul 2022.
- [11] Sergio Hernan Garrido Mejia, Elke Kirschbaum, and Dominik Janzing. Obtaining causal information by merging datasets with maxent. In *Proceedings of the Twenty Fifth International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.
- [12] Michel Besserve, Rémy Sun, Dominik Janzing, and Bernhard Schölkopf. A theory of independent mechanisms for extrapolation in generative models. In *Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI)*, volume 35, pages 6741–6749, feb 2021.
- [13] Leena Chennuru Vankadara, Phillip Michael Faller, Lenon Minorics, Debarghya Ghoshdastidar, and Dominik Janzing. Causal forecasting: Generalization bounds for autoregressive models. In *UAI 2022*.
- [14] Osama Makansi, Julius von Kügelgen, Francesco Locatello, Dominik Janzing Peter Gehler, Bernhard Schölkopf, and Thomas Brox. You mostly walk alone: Analyzing feature attribution in trajectory prediction. In *ICLR 2022*, 2022.

- [15] Lenon Minorics, Ali Caner Türkmen, Patrick Bloebaum, David Kerner, Laurent Callot, and Dominik Janzing. Testing for granger non-causality in panels with cross-sectional dependencies. In *Proceedings of the Twenty Fifth International Conference on Artificial Intelligence and Statistics (AISTATS)*, 2022.
- [16] Atalanti A Mastakouri, Bernhard Schölkopf, and Dominik Janzing. Necessary and sufficient conditions for causal feature selection in time series with latent common causes. In *International Conference on Machine Learning (ICML)*, pages 7502–7511. PMLR, 2021.
- [17] Michel Besserve, Naji Shajarisales, Dominik Janzing, and Bernhard Schölkopf. Identifying cause versus effect in time series via spectral independence: theoretical foundations. In *Proceedings of First Conference on Causal Learning and Reasoning (CLear 2022)*, 2022.
- [18] K. Budhathoki, D. Janzing, P. Blöbaum, and H. Ng. Why did the distribution change? In *Proceedings of 24th International Conference on Artificial Intelligence and Statistics (AISTATS)*, page to appear. Journal Machine Learning Research (JMLR), 2021.
- [19] D. Janzing. Causal regularization. In H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, editors, *Advances in Neural Information Processing Systems 32*, pages 12704–12714. Curran Associates, Inc., 2019.
- [20] A. Mastakouri, B. Schölkopf, and D. Janzing. Selecting causal brain features with a single conditional independence test per feature. In H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, editors, *Advances in Neural Information Processing Systems*, volume 32, pages 1–12. Curran Associates, Inc., 2019.
- [21] K. Meding, D. Janzing, B. Schölkopf, and F. Wichmann. Perceiving the arrow of time in autoregressive motion. In H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, editors, *Advances in Neural Information Processing Systems 32*, pages 2306–2317. Curran Associates, Inc., 2019.
- [22] D. Janzing, L. Minorics, and P. Bloebaum. Feature relevance quantification in explainable ai: A causal problem. In S. Chiappa and R. Calandra, editors, *Proceedings of the Twenty Third International Conference on Artificial Intelligence and Statistics*, volume 108 of *Proceedings of*

Machine Learning Research, pages 2907–2916, Online, 26–28 Aug 2020. PMLR.

- [23] M. Besserve, N. Shajarisales, B. Schölkopf, and D. Janzing. Group invariance principles for causal generative models. In *Proceedings of the 21st International Conference on Artificial Intelligence and Statistics (AISTATS 2018)*, volume 84 of *Proceedings of Machine Learning Research*, pages 557–565. PMLR, 2018.
- [24] D. Janzing and B. Schölkopf. Detecting non-causal artifacts in multivariate linear regression models. In *Proceedings of the 35th International Conference on Machine Learning (ICML 2018)*, 2018.
- [25] P. K. Rubenstein, S. Weichwald, S. Bongers, J. M. Mooij, D. Janzing, M. Grosse-Wentrup, and B. Schölkopf. Causal consistency of structural equation models. In *Proceedings of the Thirty-Third Conference on Uncertainty in Artificial Intelligence (UAI 2017)*, 2017.
- [26] B. Schölkopf, D. Wang, D. Hogg, D. Foreman-Mackey, D. Janzing, C.-J. Simon-Gabriel, and J. Peters. Removing systematic errors for exoplanet search via latent causes. In *Proceedings of the International Conference on Machine Learning*, Lille, 2015.
- [27] E. Sgouritsa, D. Janzing, P. Hennig, and B. Schölkopf. Inference of cause and effect with unsupervised inverse regression. In G. Lebanon and S. Vishwanathan, editors, *Proceedings of the 18th International Conference on Artificial Intelligence and Statistics (AISTATS)*, JMLR Workshop and Conference Proceedings, 2015.
- [28] P. Geiger, D. Janzing, and B. Schölkopf. Estimating causal effects by bounding confounding. In Nevin L. Zhang and Jin Tian, editors, *Proceedings of the 30th Conference on Uncertainty in Artificial Intelligence*, pages 240–249, Oregon, 2014. AUAI Press Corvallis.
- [29] S. Kpotufe, E. Sgouritsa, D. Janzing, and B. Schölkopf. Consistency of causal inference under the additive noise model. In Eric P. Xing and Tony Jebara, editors, *Proceedings of the 31st International Conference on Machine Learning, W&CP 32 (1)*, pages 478–495. JMLR, 2014.
- [30] R. Chaves, L. Luft, TO. Maciel, D. Gross, D. Janzing, and B. Schölkopf. Inferring latent structures via information inequalities. In NL Zhang and J Tian, editors, *Proceedings of the 30th Conference on Uncertainty*

- in Artificial Intelligence*, pages 112–121, Corvallis, Oregon, 2014. AUAI Press.
- [31] J. Peters, D. Janzing, and B. Schölkopf. Causal inference on time series using restricted structural equation models. In C. Burges, L. Bottou, M. Welling, Z. Ghahramani, and K. Weinberger, editors, *Advances in Neural Information Processing Systems 26 (NIPS 2013)*, pages 154–162. 2014.
- [32] E. Sgouritsa, D. Janzing, J. Peters, and B. Schölkopf. Identifying finite mixtures of nonparametric product distributions and causal inference of confounders. In Nicholson A. and P. Smyth, editors, *Proceedings of the 29th Conference on Uncertainty in Artificial Intelligence (UAI)*, pages 556–565, Oregon, USA, 2013. AUAI Press Corvallis.
- [33] J. Mooij, D. Janzing, and B. Schölkopf. From ordinary differential equations to structural causal models: the deterministic case. In Nicholson A. and P. Smyth, editors, *Proceedings of the 29th Conference on Uncertainty in Artificial Intelligence (UAI)*, pages 440–448, Oregon, USA, 2013. AUAI Press Corvallis.
- [34] B. Schölkopf, D. Janzing, J. Peters, E. Sgouritsa, K. Zhang, and J. Mooij. On causal and anticausal learning. In Langford J. and J. Pineau, editors, *Proceedings of the 29th International Conference on Machine Learning (ICML)*, pages 1255–1262. ACM, 2012.
- [35] J. Mooij, D. Janzing, B. Schölkopf, and T. Heskes. Causal discovery with cyclic additive noise models. In *Advances in Neural Information Processing Systems 24, Twenty-Fifth Annual Conference on Neural Information Processing Systems (NIPS 2011)*, Curran, pages 639–647, NY, USA, 2011. Red Hook.
- [36] D. Janzing, E. Sgouritsa, O. Stegle, P. Peters, and B. Schölkopf. Detecting low-complexity unobserved causes. In *Proceedings of the 27th Conference on Uncertainty in Artificial Intelligence (UAI 2011)*. <http://uai.sis.pitt.edu/papers/11/p383-janzing.pdf>.
- [37] J. Peters, J. Mooij, D. Janzing, and B. Schölkopf. Identifiability of causal graphs using functional models. In *Proceedings of the 27th Conference on Uncertainty in Artificial Intelligence (UAI 2011)*. <http://uai.sis.pitt.edu/papers/11/p589-peters.pdf>.

- [38] K. Zhang, P. Peters, D. Janzing, and B. Schölkopf. Kernel-based conditional independence test and application in causal discovery. In *Proceedings of the 27th Conference on Uncertainty in Artificial Intelligence (UAI 2011)*, 2011. <http://uai.sis.pitt.edu/papers/11/p804-zhang.pdf>.
- [39] J. Zscheischler, D. Janzing, and K. Zhang. Testing whether linear equations are causal: A free probability theory approach. In *Proceedings of the 27th Conference on Uncertainty in Artificial Intelligence (UAI 2011)*, 2011. <http://uai.sis.pitt.edu/papers/11/p839-zscheischler.pdf>.
- [40] J. Mooij, O. Stegle, D. Janzing, K. Zhang, and B. Schölkopf. Probabilistic latent variable models for distinguishing between cause and effect. In *Advances in Neural Information Processing Systems 23 (NIPS*2010)*, pages 1687–1695, 2011.
- [41] M. Besserve, D. Janzing, N. Logothetis, and B. Schölkopf. Finding dependences between frequencies with the kernel cross-spectral density. In *2011 International Conference on Acoustics, Speech and Signal Processing*. to appear.
- [42] P. Daniusis, D. Janzing, J. Mooij, J. Zscheischler, B. Steudel, K. Zhang, and B. Schölkopf. Inferring deterministic causal relations. *Proceedings of the 26th Conference on Uncertainty in Artificial Intelligence (UAI 2010)*. http://event.cwi.nl/uai2010/papers/UAI2010_0121.pdf, Best Student Paper Award.
- [43] K. Zhang, B. Schölkopf, and D. Janzing. Invariant Gaussian process latent variable models and application in causal discovery. *Proceedings of the 26th Conference on Uncertainty in Artificial Intelligence (UAI 2010)*. http://event.cwi.nl/uai2010/papers/UAI2010_0176.pdf.
- [44] D. Janzing, P. Hoyer, and B. Schölkopf. Telling cause from effect based on high-dimensional observations. *Proceedings of the 27th International Conference on Machine Learning (ICML 2010)*, Haifa, Israel, 06:479–486, 2010.
- [45] J. Peters, D. Janzing, and B. Schölkopf. Identifying cause and effect on discrete data using additive noise models. In *Proceedings of The Thirteenth International Conference on Artificial Intelligence and Statistics (AISTATS), JMLR: W&CP 9*, Chia Laguna, Sardinia, Italy, 2010.

- [46] D. Janzing, J. Peters, J. Mooij, and B. Schölkopf. Identifying latent confounders using additive noise models. In *Proceedings of the 25th Conference on Uncertainty in Artificial Intelligence (UAI 2009)*, 249–257. (Eds.) A. Ng and J. Bilmes, AUA Press, Corvallis, OR, USA, 2009.
- [47] J. Mooij, D. Janzing, J. Peters, and B. Schölkopf. Regression by dependence minimization and its application to causal inference. In *Proceedings of the 26th International Conference on Machine Learning, Montreal, ACM International Conference Proceeding Series*, pages 745–752, New York, NY, USA, 2009. <http://www.cs.mcgill.ca/~icml2009/papers/279.pdf>.
- [48] J. Peters, D. Janzing, A. Gretton, and B. Schölkopf. Detecting the direction of causal time series. In *Proceedings of the 26th International Conference on Machine Learning, Montreal, ACM International Conference Proceeding Series*, volume 382, pages 801–808, New york, NY, USA, 2009.
- [49] P. Hoyer, D. Janzing, J. Mooij, J. Peters, and B. Schölkopf. Nonlinear causal discovery with additive noise models. In D. Koller, D. Schuurmans, Y. Bengio, and L. Bottou, editors, *Proceedings of the conference Neural Information Processing Systems (NIPS) 2008*, Vancouver, Canada, 2009. MIT Press.
- [50] X. Sun, D. Janzing, B. Schölkopf, and K. Fukumizu. A kernel-based causal learning algorithm. In Z. Ghahramani, editor, *Proceedings of the 24th Annual International Conference on Machine Learning (ICML 2007)*, 855–862, ACM Press, New York, NY, USA.
- [51] X. Sun and D. Janzing. Exploring the causal order of binary variables via exponential hierarchies of Markov kernels. In *Proceedings of the European Symposium on Artificial Neural Networks 2007*, pages 441–446, Bruges, Belgium, 2007. <http://www.dice.ucl.ac.be/Proceedings/esann/esannpdf/es2007-148.pdf>.
- [52] X. Sun, D. Janzing, and B. Schölkopf. Distinguishing between cause and effect via kernel-based complexity measures for conditional distributions. In *Proceedings of the European Symposium on Artificial Neural Networks 2007*, pages 465–470, Bruges, Belgium. <http://www.dice.ucl.ac.be/Proceedings/esann/esannpdf/es2007-149.pdf>.

- [53] X. Sun, D. Janzing, and B. Schölkopf. Causal inference by choosing graphs with most plausible Markov kernels. In *Proceedings of the 9th International Symposium on Artificial Intelligence and Mathematics*, pages 1–11, Fort Lauderdale, FL, 2006.

Articles in peer-reviewed journals

- [1] Dominik Janzing and Sergio Hernan Garrido Mejia. A phenomenological account for causality in terms of elementary actions. To appear in *Journal of Causal Inference*, 2024.
- [2] Dominik Janzing. Causal versions of maximum entropy and principle of insufficient reason. *Journal of Causal Inference*, 2021.
- [3] D. Janzing and P. Wocjan. Does universal controllability of physical systems prohibit thermodynamic cycles? *Open Systems & Information Dynamics*, 25(03):1850016, 2018. arXiv:1701.01591.
- [4] D. Janzing and B. Schölkopf. Detecting confounding in multivariate linear models via spectral analysis. *Journal of Causal Inference*, 6(1), 2017.
- [5] D. Janzing, R. Chaves, and B. Schölkopf. Algorithmic independence of initial condition and dynamical law in thermodynamics and causal inference. *New Journal of Physics*, 18(093052):1–13, 2016.
- [6] J. Mooij, J. Peters, D. Janzing, J. Zscheischler, and B. Schölkopf. Distinguishing cause from effect using observational data: methods and benchmarks. *Journal of Machine Learning Research*, 17(32):1–102, 2016.
- [7] M. Grosse-Wentrup, D. Janzing, M. Siegel, and B. Schölkopf. Identification of causal relations in neuroimaging data with latent confounders: An instrumental variable approach. *NeuroImage*, 125:825–833, 2016.
- [8] B. Schölkopf, D. Hogg, D. Wang, D. Foreman-Mackey, D. Janzing, C.-J. Simon-Gabriel, and J. Peters. Modeling confounding by half-sibling regression. *Proceedings of the National Academy of Science*, 113(27):7391–7398, 2016.
- [9] D. Janzing and B. Schölkopf. Semi-supervised interpolation in an anticausal learning scenario. *Journal of Machine Learning Research*, 16:1923–1948, 2015.

- [10] K. Ried, M. Agnew, L. Vermeyden, D. Janzing, R. Spekkens, and K. Resch. A quantum advantage for inferring causal structure. *Nature Physics*, 11(5):414–420, 05 2015.
- [11] J. Peters, JM. Mooij, D. Janzing, and B. Schölkopf. Causal discovery with continuous additive noise models. *Journal of Machine Learning Research*, 15:2009–2053, 2014.
- [12] D. Janzing, D. Balduzzi, M. Grosse-Wentrup, and B. Schölkopf. Quantifying causal influences. *Annals of Statistics*, 41(5):2324–2358, 2013.
- [13] D. Janzing, J. Mooij, K. Zhang, J. Lemeire, J. Zscheischler, P. Daniušis, B. Steudel, and B. Schölkopf. Information-geometric approach to inferring causal directions. *Artificial Intelligence*, 182–183:1–31, 2012.
- [14] J. Lemeire and D. Janzing. Replacing causal faithfulness with algorithmic independence of conditionals. *Minds and Machines*, 23(2):227–249, 7 2012.
- [15] J. Peters, D. Janzing, and B. Schölkopf. Causal inference on discrete data using additive noise models. *IEEE Transac. Patt. Analysis and Machine Int.*, 33(12):2436–2450, 2011.
- [16] D. Janzing and B. Schölkopf. Causal inference using the algorithmic Markov condition. *IEEE Transactions on Information Theory*, 56(10):5168–5194, 2010.
- [17] D. Janzing and B. Steudel. Justifying additive-noise-based causal discovery via algorithmic information theory. *Open Systems and Information Dynamics*, 17(2):189–212, 2010.
- [18] J. Mooij and D. Janzing. Distinguishing between cause and effect. *Journal of Machine Learning Research, Workshop and Conference Proceedings*, 6:147–146, 2010.
- [19] A. Allahverdyan, K. Hovhannisyanyan, D. Janzing, and G. Mahler. Thermodynamic limits of dynamic cooling. *Phys. Rev. E*, E(48):041109, 2011.
- [20] A. Allahverdyan, D. Janzing, and G. Mahler. Thermodynamic efficiency of information and heat flow. *Journal of Statistical Mechanics: Theory and Experiment*, 2009(09):P09011 (35pp), 2009.

- [21] D. Janzing and P. Wocjan. A PromiseBQP-complete string rewriting problem. *Quantum Information & Computation*, 10(3&4):234–257, 2010.
- [22] D. Janzing. On the entropy production of time series with unidirectional linearity. *Journ. Stat. Phys.*, 138:767–779, 2010.
- [23] A. Allahverdyan and D. Janzing. Relating the thermodynamic arrow of time to the causal arrow. *J. Stat. Mech.*, 4:P04001, 2008.
- [24] D. Janzing, P. Wocjan, and S. Zhang. A single-shot measurement of the energy of product states in a translation invariant spin chain can replace any quantum computation. *New Journal of Physics*, 10(093004):1–18, 2008.
- [25] X. Sun, D. Janzing, and B. Schölkopf. Causal reasoning by evaluating the complexity of conditional densities with kernel methods. *Neurocomputing*, 71:1248–1256, 2008.
- [26] P. Wocjan, D. Janzing, and Th. Decker. Measuring 4-local n-qubit observables could probabilistically solve PSPACE. *Quantum Information and Computation*, 4(8 & 9):741–755, 2008.
- [27] D. Janzing and P. Wocjan. A simple PromiseBQP-complete matrix problem. *Theory of Computing*, 3(4):61–79, 2007.
- [28] D. Janzing and B. Steudel. Quantum broadcasting problem in classical low power signal processing. *Phys. Rev.*, A(75):022309, 2007.
- [29] D. Janzing. Spin-1/2 particles moving on a 2D lattice with nearest-neighbor interactions can realize an autonomous quantum computer. *Phys. Rev. A*, 75:012307, 2007.
- [30] D. Janzing. Quantum thermodynamics with missing reference frames: Decompositions of free energy into non-increasing components. *J. Stat. Phys.*, 125(3):757–772, 2006.
- [31] D. Janzing. On the computational power of molecular heat engines. *J. Stat. Phys.*, 122(3):531–556, 2006.
- [32] F. Schmüser and D. Janzing. Entanglement generation via scattering of two particles with hard-core repulsion. *Phys. Rev. A*, 73:052313, 2006.
- [33] F. Schmüser and D. Janzing. On quantum analogue-to-digital and digital-to-analogue conversion. *Phys. Rev. A*, 72:042324, 2005.

- [34] D. Janzing and T. Decker. Minimally-disturbing Heisenberg-Weyl symmetric measurements using hard-core collisions of Schrödinger particles. *Journ. Math. Phys.*, 47:757–772, 2006.
- [35] T. Decker, D. Janzing, and M. Rötteler. Implementation of group-covariant positive operator valued measures by orthogonal measurements. *Journ. Math. Phys.*, 46:012104, 2005.
- [36] T. Decker, D. Janzing, and T. Beth. Quantum circuits for single-qubit measurements corresponding to platonic solids. *Int. Journ. Quant. Inform.*, 2(3):353–377, 2004.
- [37] D. Janzing. Decomposition of time-covariant operations on quantum systems with continuous and/or discrete energy spectrum. *Journ. Math. Phys.*, 46:122107, 2005.
- [38] D. Janzing and P. Wocjan. Ergodic quantum computing. *Quant. Inf. Process.*, 4(2):129–158, 2005.
- [39] D. Janzing and T. Beth. On the potential influence of quantum noise on measuring effectiveness of drugs in clinical trials. *Int. Journ. Quant. Inf.*, 4(2):347–364, 2006.
- [40] D. Janzing, P. Wocjan, and T. Beth. “Non-Identity check” is QMA-complete. *Int. Journ. Quant. Inf.*, 3(3):463–473, 2005.
- [41] P. Wocjan, D. Janzing, and T. Beth. Two QCMA-complete problems. *Quant. Inf. & Comp.*, 3(6):635–643, 2003.
- [42] D. Janzing, P. Wocjan, and T. Beth. On the computational power of physical interactions: Bounds on the number of time steps for simulating arbitrary interaction graphs. *Int. Jour. Found. Comp. Science, special issue for Quantum Computation*, 14(5):889–903, 2002.
- [43] D. Janzing, T. Decker, and Beth. T. Performing joint measurements and transformations on several qubits by operating on a single “control” qubit. *Phys. Rev.*, A(67):042320, 2003. selected for the Virtual Journal of Quantum information.
- [44] D. Janzing and T. Beth. Quasi-order of clocks and their synchronism and quantum bounds for copying timing information. *IEEE Transactions Information Theory*, 49(1):230–240, 2003.

- [45] P. Wocjan, M. Rötteler, D. Janzing, and Th. Beth. Simulating Hamiltonians in quantum Networks: Efficient schemes and complexity bounds. *Phys. Rev. A*, 65:042309, 2002.
- [46] P. Wocjan, M. Rötteler, D. Janzing, and Th. Beth. Universal Simulation of Hamiltonians using a finite set of control operations. *Quant. Inform. & Comp.*, 2(2):133–150, 2002.
- [47] D. Janzing. Quantum algorithm for measuring the energy of n qubits with unknown pair-interactions. *Quant. Inform. & Comp.*, 2(3):198–207, 2002.
- [48] P. Wocjan, D. Janzing, and Th. Beth. Treating the Independent Set Problem by 2D Ising Interactions with Adiabatic Quantum Computing. *Quant. Inf. Proc.*, 2(4):259–270, 2003.
- [49] D. Janzing and Th. Beth. Quantum algorithm for measuring the eigenvalues of $U \otimes U^{-1}$ for a black-box unitary transformation U . *Quant. Inform. & Comp.*, 2(3):192–197, 2002.
- [50] D. Janzing, P. Wocjan, and Th. Beth. Complexity of decoupling and time-reversal for n spins with pair-interactions: Arrow of time in quantum control. *Physical Review A*, 66:042311, 2002.
- [51] P. Wocjan, D. Janzing, and Th. Beth. Simulating arbitrary pair-interactions by a given Hamiltonian: Graph-theoretical bounds on the time complexity. *Quant. Inform. & Comp.*, 2(2):117–132, 2002.
- [52] D. Janzing, F. Armknecht, R. Zeier, and Th. Beth. Quantum control without access to the controlling interaction. *Phys. Rev. A*, 65:022104, 2002.
- [53] D. Janzing and Th. Beth. Distinguishing n Hamiltonians on C^n by a single measurement. *Phys. Rev. A*, 65:022303, 2002.
- [54] R. Steinwandt, D. Janzing, and Th. Beth. On using quantum protocols to detect traffic analysis. *Quant. Inform. & Comp.*, 1(3):62–69, 2001.
- [55] D. Janzing and Th. Beth. Complexity measure for continuous time quantum algorithms. *Phys. Rev. A*, 64(2):022301, 2001.
- [56] D. Janzing, P. Wocjan, R. Zeier, R. Geiss, and Th. Beth. Thermodynamic cost of reliability and low temperatures : Tightening Landauer’s principle and the Second Law. *Int. Jour. Theor. Phys.*, 39(12):2217–2753, 2000.

- [57] D. Janzing and T. Beth. Fragility of a class of highly entangled states with n qubits. *Phys. Rev. A*, 61:052308, 2000.

Articles in books

- [1] D. Janzing. The cause-effect problem: Motivation, ideas, and popular misconceptions. In I. Guyon, R. Statnikov, and B. Bakir Batu, editors, *Cause Effect Pairs in Machine Learning*, pages 3–26. Springer, 2019.
- [2] D. Janzing, B. Steudel, N. Shajarisales, and B. Schölkopf. Justifying information-geometric causal inference. In V. Vovk, Papadopolous H., and A. Gammerman, editors, *Measures of Complexity*, Festschrift for Alexey Chervonencis, pages 253–265. Springer Verlag, Heidelberg, 2015.
- [3] B. Schölkopf, D. Janzing, J. Peters, E. Sgouritsa, K. Zhang, and J. Mooij. Semi-supervised learning in causal and anticausal settings. In B. Schölkopf, Z. Luo, and V. Vovk, editors, *Empirical Inference*, Festschrift in Honor of Vladimir Vapnik, pages 129–141. Springer, 2013.
- [4] J. Peters, D. Janzing, A. Gretton, and B. Schölkopf. Kernel methods for detecting the direction of time series. In *Proceedings of the 32nd Annual Conference of the German Classification Society (GfCKI 2008)*, pages 1–10, Berlin, Germany, 2009. Springer.
- [5] D. Janzing. Entanglement. In D. Greenberger, K. Hentschel, and F. Weinert, editors, *Compendium of Quantum Physics*. Springer, 2009.
- [6] D. Janzing. Quantum Entropy. In D. Greenberger, K. Hentschel, and F. Weinert, editors, *Compendium of Quantum Physics*. Springer, 2009.
- [7] D. Janzing. On the relevance of quantum information theory for future low-power information processing. In B. Mertsching, editor, *Fundamentals & Methods for Low-Power Information Processing*. Springer, 2006.
- [8] T. Beth, M. Grassl, D. Janzing, M. Rötteler, P. Wocjan, and R. Zeier. Quantum information processing. chapter Algorithms for Quantum Systems - Quantum Algorithms. Wiley-CH, Berlin, 2003.
- [9] D. Janzing. Complexity of physical processes as a natural generalization of computational complexity. In W. Schleich and H. Walther, editors, *Elements of Quantum Information*, pages 377–396. Wiley-WCH, Berlin, 2007.

- [10] D. Janzing. A quasi-order of resources as a new concept for a thermodynamic theory of quantum state preparation. In *Sciences of the interface*, Tübingen, 2000. Genista Verlag.
- [11] D. Janzing and Th. Beth. Are there quantum bounds on the recyclability of clock signals in low power computers? In *Proceedings of the DFG-Kolloquium VIVA*, Chemnitz, 2002. See also preprint [arXiv:quant-ph/0202059](#).

Popular scientific article

- [1] D. Janzing. Mit Quanten ist zu rechnen. *Physik Journal*, pages 25–28, November 2005.

Co-edited books and journals

- [1] I. Guyon, D. Janzing, and B. Schölkopf, editors. *Proceedings of the NIPS 2008 workshop “Causality: Objectives and Assessment”*, *Journal for Machine Learning Research, Workshop & Conference Proceedings*, 2010.
- [2] D. Janzing and J. Müller-Quade, editors. *Quantum Information Technology*. Sonderband Informatik in Forschung und Entwicklung. Springer, 2006.

Preprints

- [1] D. Janzing. Simple negative result for physically universal controllers with macroscopic interface. preprint [arXiv:1804.05954](#).
- [2] Dominik Janzing. Merging joint distributions via causal model classes with low vc dimension. *arXiv preprint arXiv:1804.03206*, 2018.

Theses (Habilitation / Doktor / Diplom)

- [1] D. Janzing. *Computer Science Approach to Quantum Control*. Habilitationsschrift. UniVerlag Karlsruhe, 2006.
- [2] D. Janzing. *Limesdynamik translationsinvarianter Quantengittersysteme*. Dissertation Universität Tübingen, 1998.

- [3] D. Janzing. *Spektroskopie elastisch gestreuter Ionen an strukturierten Oberflächen*. Universität Tübingen und MPI für Metallforschung, Stuttgart, 1995. Diplomarbeit.