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## References

[1] Haidar Al-Talibi, Astrid Hilbert, and Vassili Kolokoltsov. Smoluchowski-kramers limit for a system subject to a mean-field drift. arXiv preprint arXiv:1303.0110, 2013.

- [2] John-Mark A. Allen, Jonathan Barrett, Dominic C. Horsman, Ciarán M. Lee, and Robert W. Spekkens. Quantum common causes and quantum causal models. *Physical Review X*, 7(3), Jul 2017.
- [3] Robert Altmann and Philipp Schulze. On the port-hamiltonian structure of the navier-stokes equations for reactive flows. 2016.
- [4] James Anderson and Nikolai Matni. Structured state space realizations for SLS distributed controllers. In *Allerton*, pages 982–987. IEEE, 2017.
- [5] Mateus Araújo, Cyril Branciard, Fabio Costa, Adrien Feix, Christina Giarmatzi, and Časlav Brukner. Witnessing causal nonseparability. *New Journal of Physics*, 17(10):102001, Oct 2015.
- [6] Hassan Aref. Chaotic advection of fluid particles. 1990.
- [7] Nigum Arshed and A. H. Toor. Entanglement-assisted classical capacity of quantum channels with correlated noise. 2006.
- [8] Ellen Arvidsson. Deterministic concurrency using lattices and the object capability model, 2018.
- [9] Arbi Moses Badlyan, Bernhard Maschke, Christopher A. Beattie, and Volker Mehrmann. Open physical systems: from generic to port-hamiltonian systems. 2018.
- [10] Howard Barnum, Michael A. Nielsen, and Benjamin Schumacher. Information transmission through a noisy quantum channel. 1998.
- [11] VIACHESLAV P BELAVKIN and MASANORI OHYA. Quantum entropy and information in discrete entangled states. *Infinite Dimensional Analysis, Quantum Probability and Related Topics*, 4(02):137–160, 2001.
- [12] Charles H. Bennett, Peter W. Shor, John A. Smolin, and Ashish V. Thapliyal. Entanglement-assisted capacity of a quantum channel and the reverse shannon theorem. *IEEE Trans. Information Theory*, 48(10):2637–2655, 2002.
- [13] C'edric B'eny. Causal structure of the entanglement renormalization ansatz. 2011.
- [14] Mario Berta, Fernando G. S. L. Brandao, Matthias Christandl, and Stephanie Wehner. Entanglement cost of quantum channels. *IEEE Transactions on Information Theory*, 59(10):6779–6795, Oct 2013.
- [15] Marco Bertola, Boris Dubrovin, and Di Yang. Simple lie algebras, drinfeld—sokolov hierarchies, and multi-point correlation functions. 2016.
- [16] Timo Betcke and Heinrich Voss. A jacobi-davidson-type projection method for nonlinear eigenvalue problems. Future Generation Comp. Syst., 20(3):363–372, 2004.
- [17] Adara M. Blaga. Remarks on poisson reduction on k-symplectic manifolds. 2012.
- [18] Frank Blömeling. Multi-level substructuring combined with model order reduction methods. *Linear Algebra and its Applications*, 436(10):3864–3882, May 2012.
- [19] Frank Blömeling. Hierarchical substructuring combined with svd-based model reduction methods. 2006.
- [20] Frank Blömeling. Substructuring and svd-based model reduction. In PAMM: Proceedings in Applied Mathematics and Mechanics, volume 6, pages 709–710. Wiley Online Library, 2006.
- [21] Oksana Bollineni-Balabay, Jan van den Brakel, Franz Palm, and Harm Jan Boonstra. Multilevel hierarchical bayesian versus state space approach in time series small area estimation: the dutch travel survey. *Journal of the Royal Statistical Society: Series A (Statistics in Society)*, 180(4):1281–1308, 2017.
- [22] Peter G. Bouwknegt and Kareljan Schoutens. W symmetry in conformal field theory. 1993.
- [23] Angelika Bunse-Gerstner, D. Kubalinska, G. Vossen, and Diane Wilczek. h<sub>2</sub>-norm optimal model reduction for large scale discrete dynamical MIMO systems. *J. Computational Applied Mathematics*, 233(5):1202–1216, 2010.
- [24] Sina Y. Caliskan and Paulo Tabuada. Kron reduction of generalized electrical networks. CoRR, abs/1207.0563, 2012.
- [25] Paolo Casati. A new construction of the drinfeld-sokolov hierarchies. 2013.
- [26] Esteban Castro-Ruiz, Flaminia Giacomini, and vCaslav Brukner. Dynamics of quantum causal structures. 2017.
- [27] Alberto S. Cattaneo and Marco Zambon. A supergeometric approach to poisson reduction. *Communications in Mathematical Physics*, 318:675–716, 2013.

- [28] Nicolas J. Cerf and C. Adami. Quantum information theory of entanglement and measurement. 1996.
- [29] Changyou Chen, Chunyuan Li, Liquan Chen, Wenlin Wang, Yunchen Pu, and Lawrence Carin. Continuous-time flows for efficient inference and density estimation. In *ICML*, volume 80 of *Proceedings of Machine Learning Research*, pages 823–832. PMLR, 2018.
- [30] Tian Qi Chen, Yulia Rubanova, Jesse Bettencourt, and David K. Duvenaud. Neural ordinary differential equations. In NeurIPS, 2018.
- [31] Giulio Chiribella. Perfect discrimination of no-signalling channels via quantum superposition of causal structures.  $Physical\ Review\ A,\ 86(4),\ Oct\ 2012.$
- [32] Giulio Chiribella, Giacomo Mauro D'Ariano, Paolo Perinotti, and Benoit Valiron. Quantum computations without definite causal structure. *Physical Review A*, 88(2), Aug 2013.
- [33] SHUI-NEE CHOW, WUCHEN LI, CHENCHEN MOU, and HAOMIN ZHOU. A discrete schrodinger bridge problem via optimal transport on graphs. *calculus of variations*, 20(33):34.
- [34] Marco Cirant. A generalization of the hopfcole transformation for stationary mean-field games systems. 2015.
- [35] Rob Clifton. The subtleties of entanglement and its role in quantum information theory. *Philosophy of Science*, 69(S3):S150–S167, Sep 2002.
- [36] Govinda Clos, Diego Porras, Ulrich Warring, and Tobias Schaetz. Time-resolved observation of thermalization in an isolated quantum system. *Physical Review Letters*, 117(17), Oct 2016.
- [37] Duncan Coutts, Roman Leshchinskiy, and Don Stewart. Stream fusion: from lists to streams to nothing at all. In *ICFP*, pages 315–326. ACM, 2007.
- [38] Frans Delarue, Daniel Lacker, and Kavita Ramanan. From the master equation to mean field game limit theory: Large deviations and concentration of measure. 2018.
- [39] Laurent Dinh, David Krueger, and Yoshua Bengio. NICE: non-linear independent components estimation. In *ICLR* (Workshop), 2015.
- [40] Laurent Dinh, Jascha Sohl-Dickstein, and Samy Bengio. Density estimation using real NVP. In ICLR. OpenReview.net, 2017.
- [41] Theodore D. Drivas and Darryl D. Holm. Circulation and energy theorem preserving stochastic fluids. 2018.
- [42] Karthik Elamvazhuthi, Matthias Kawski, Shiba Biswal, Vaibhav Deshmukh, and Spring Berman. Mean-field control-lability and decentralized stabilization of markov chains. In *CDC*, pages 3131–3137. IEEE, 2017.
- [43] Kolja Elssel and Heinrich Voss. Solving nonlinear eigenproblems by amls. PAMM, 5(1):765–766, Dec 2005.
- [44] Laszlo Lorant Feher. Kdv type systems and w algebras in the drinfeld-sokolov approach. 1995.
- [45] László Fehér and Izumi Tsutsui. Regularization of toda lattices by hamiltonian reduction. *Journal of Geometry and Physics*, 21(2):97–135, Jan 1997.
- [46] Yihao Feng, Dilin Wang, and Qiang Liu. Learning to draw samples with amortized stein variational gradient descent. In UAI. AUAI Press, 2017.
- [47] Steven French and Dean Rickles. Understanding permutation symmetry. Symmetries in Physics, page 212–238.
- [48] Nicolas Gast, Bruno Gaujal, and Jean-Yves Le Boudec. Mean field for markov decision processes: From discrete to continuous optimization. *IEEE Trans. Automat. Contr.*, 57(9):2266–2280, 2012.
- [49] Mevlana C. Gemici, Danilo Jimenez Rezende, and Shakir Mohamed. Normalizing flows on riemannian manifolds. CoRR, abs/1611.02304, 2016.
- [50] Matthias Geuss, Heiko K.F. Panzer, Ivor D. Clifford, and Boris Lohmann. Parametric model order reduction using pseudoinverses for the matrix interpolation of differently sized reduced models. IFAC Proceedings Volumes, 47(3):9468–9473, 2014.
- [51] Steven B. Giddings and Massimiliano Rota. Quantum information or entanglement transfer between subsystems. *Physical Review A*, 98(6), Dec 2018.
- [52] Vittorio Giovannetti, S. Montangero, and Rosario P. Fazio. Quantum mera channels. 2008.

- [53] Ian Goodfellow, Jean Pouget-Abadie, Mehdi Mirza, Bing Xu, David Warde-Farley, Sherjil Ozair, Aaron Courville, and Yoshua Bengio. Generative adversarial nets. In *Advances in neural information processing systems*, pages 2672–2680, 2014.
- [54] Will Grathwohl, Ricky T. Q. Chen, Jesse Bettencourt, Ilya Sutskever, and David K. Duvenaud. FFJORD: free-form continuous dynamics for scalable reversible generative models. *CoRR*, abs/1810.01367, 2018.
- [55] Laszlo Gyongyosi, S' andor Imre, and Hung Viet Nguyen. A survey on quantum channel capacities. *IEEE Communications Surveys and Tutorials*, 20(2):1149–1205, 2018.
- [56] Jun Han and Qiang Liu. Stein variational gradient descent without gradient. In *ICML*, volume 80 of *Proceedings of Machine Learning Research*, pages 1895–1903. PMLR, 2018.
- [57] Shinji Hara, Jun-ichi Imura, Koji Tsumura, Takayuki Ishizaki, and Tomonori Sadamoto. Glocal (global/local) control synthesis for hierarchical networked systems. In *CCA*, pages 107–112. IEEE, 2015.
- [58] Nathan L. Harshman. Symmetry, structure, and emergent subsystems. 2018.
- [59] Koji Hashimoto, Sotaro Sugishita, Akinori Tanaka, and Akio Tomiya. Deep learning and the ads/cft correspondence. *Physical Review D*, 98(4):046019, 2018.
- [60] Simon Hochgerner. Chaplygin systems associated to cartan decompositions of semi-simple lie groups. Differential Geometry and its Applications, 28(4):436–453, 2010.
- [61] Simon Hochgerner. Stochastic chaplygin systems. Reports on Mathematical Physics, 66(3):385–401, Dec 2010.
- [62] Simon Hochgerner. Stochastic mean-field approach to fluid dynamics. J. Nonlinear Science, 28(2):725–737, 2018.
- [63] Philip Holzwarth and Peter Eberhard. Interface reduction for cms methods and alternative model order reduction. IFAC-PapersOnLine, 48(1):254–259, 2015.
- [64] Michal Horodecki, Pawel Horodecki, Ryszard Horodecki, Debbie W. Leung, and Barbara M. Terhal. Classical capacity of a noiseless quantum channel assisted by noisy entanglement. *Quantum Information & Emp: Computation*, 1(3):70–78, 2001.
- [65] Cho-Jui Hsieh and Peder A. Olsen. Nuclear norm minimization via active subspace selection. In *ICML*, volume 32 of *JMLR Workshop and Conference Proceedings*, pages 575–583. JMLR.org, 2014.
- [66] Chin-Wei Huang, David Krueger, Alexandre Lacoste, and Aaron C. Courville. Neural autoregressive flows. In *ICML*, 2018.
- [67] Graham Hutton. A tutorial on the universality and expressiveness of fold. J. Funct. Program., 9(4):355–372, 1999.
- [68] Vassilis N. Ioannidis, Daniel Romero, and Georgios B. Giannakis. Inference of spatiotemporal processes over graphs via kernel kriged kalman filtering. In *EUSIPCO*, pages 1679–1683. IEEE, 2017.
- [69] Tudor C Ionescu and Ion Necoara. A scalable moment matching-based model reduction technique of linear networks. *IFAC-PapersOnLine*, 50(1):8232–8237, 2017.
- [70] Elias Jarlebring and Heinrich Voss. Rational krylov for nonlinear eigenproblems, an iterative projection method. *Applications of Mathematics*, 50(6):543–554, 2005.
- [71] Ding Jia et al. Generalizing entanglement. Physical Review A, 96(6):062132, 2017.
- [72] Y-W Jing, Georgi M Dimirovski, Jun Zhao, and Mile J Stankovski. Decomposition of complex linear systems via hierarchical similarity structure. In 9th International Conference on Electronics, Circuits and Systems, volume 3, pages 887–890. IEEE, 2002.
- [73] Yuan-Wei Jing, Jun Zhao, Mile Stankovski, and Georgi Dimirovski. Three theorems on hierarchical decomposition of similarity linear systems. Facta universitatis series: Electronics and Energetics, 17(2):241–249, 2004.
- [74] YW Jing, GM Dimirovski, J Zhao, A Okatan, and MJ Stankovski. On system decompositions with similarity hierarchical structure.
- [75] Michael Joham, Yanliang Sun, Michael D. Zoltowski, Michael L. Honig, and J. Scott Goldstein. A new backward recursion for the multi-stage nested wiener filter employing krylov subspace methods. 2001.
- [76] Michael Joham and Michael D. Zoltowski. Interpretation of the multi-stage nested wiener filter in the krylov subspace framework. 2000.

- [77] Tohru Katayama. Subspace methods for system identification. Springer Science & Business Media, 2006.
- [78] Isaac H. Kim and Michael J. Kastoryano. Entanglement renormalization, quantum error correction, and bulk causality. 2017.
- [79] Taesup Kim and Yoshua Bengio. Deep directed generative models with energy-based probability estimation. *CoRR*, abs/1606.03439, 2016.
- [80] Diederik P. Kingma and Prafulla Dhariwal. Glow: Generative flow with invertible 1x1 convolutions. In NeurIPS, 2018.
- [81] Diederik P. Kingma, Tim Salimans, and Max Welling. Improved variational inference with inverse autoregressive flow. CoRR, abs/1606.04934, 2017.
- [82] Martin Kliesch, Richard Kueng, Jens Eisert, and David Gross. Improving compressed sensing with the diamond norm. *IEEE Transactions on Information Theory*, 62:7445–7463, 2016.
- [83] Anna Kolesnichenko, Valerio Senni, Alireza Pourranjabar, and Anne Remke. Applying mean-field approximation to continuous time markov chains. In *ROCKS*, volume 8453 of *Lecture Notes in Computer Science*, pages 242–280. Springer, 2012.
- [84] Itzchak E Kornfeld. Adiós to paradise: The yacyretá dam and the destruction of environmental and human rights. Fla. A & M UL Rev., 7:181, 2011.
- [85] Aleksandra Kostić and Heinrich Voss. Recurrence relations for the even and odd characteristic polynomials of a symmetric toeplitz matrix. *Journal of Computational and Applied Mathematics*, 173(2):365–369, Jan 2005.
- [86] Dennis Kretschmann and Reinhard F. Werner. Quantum channels with memory. 2005.
- [87] Jörg Lampe and Heinrich Voss. Solving regularized total least squares problems based on eigenproblems. *Taiwanese Journal of Mathematics*, 14(3A):885–909, Jun 2010.
- [88] Flavien L'eger and Wuchen Li. Hopf-cole transformation via generalized schrödinger bridge problem. 2019.
- [89] M. S. Leifer and Robert W. Spekkens. Towards a formulation of quantum theory as a causally neutral theory of bayesian inference. *Physical Review A*, 88(5), Nov 2013.
- [90] Z. Lendek, R. Babuška, and B. De Schutter. Distributed kalman filtering for cascaded systems. *Engineering Applications of Artificial Intelligence*, 21(3):457–469, Apr 2008.
- [91] G. B. Lesovik, Alexander V. Lebedev, I. A. Sadovskyy, M. V. Suslov, and V. M. Vinokur. H-theorem in quantum physics. In *Scientific reports*, 2016.
- [92] Xuechen Li. Training glow with constant memory cost. 2018.
- [93] Qiang Liu. Stein variational gradient descent: Theory and applications. 2016.
- [94] Qiang Liu and Yihao Feng. Two methods for wild variational inference. 2017.
- [95] Qiang Liu and Jason D. Lee. Black-box importance sampling. In AISTATS, 2017.
- [96] Qiang Liu, Jason D. Lee, and Michael I. Jordan. A kernelized stein discrepancy for goodness-of-fit tests. In *ICML*, volume 48 of *JMLR Workshop and Conference Proceedings*, pages 276–284. JMLR.org, 2016.
- [97] Qiang Liu and Dilin Wang. Stein variational gradient descent: A general purpose bayesian inference algorithm. In NIPS, pages 2370–2378, 2016.
- [98] Qiang Liu and Dilin Wang. Stein variational gradient descent as moment matching. In NeurIPS, pages 8868–8877, 2018.
- [99] Tom Lodewyckx, Francis Tuerlinckx, Peter Kuppens, Nicholas B Allen, and Lisa Sheeber. A hierarchical state space approach to affective dynamics. *Journal of mathematical psychology*, 55(1):68–83, 2011.
- [100] Hans-Andrea Loeliger, Justin Dauwels, Junli Hu, Sascha Korl, Li Ping, and Frank R. Kschischang. The factor graph approach to model-based signal processing. *Proceedings of the IEEE*, 95(6):1295–1322, 2007.
- [101] RICHARD W. LONGMAN and JER-NAN JUANG. Recursive form of the eigensystem realization algorithm for system identification. *Journal of Guidance, Control, and Dynamics*, 12(5):647–652, Sep 1989.

- [102] Jan Lunze. Stability analysis of large-scale systems composed of strongly coupled similar subsystems. *Automatica*, 25(4):561–570, 1989.
- [103] Fumio Machida, Jianwen Xiang, Kumiko Tadano, and Yoshiharu Maeno. Composing hierarchical stochastic model from sysml for system availability analysis. In *ISSRE*, pages 51–60. IEEE Computer Society, 2013.
- [104] Wolfgang Mackens, Jürgen Menck, and Heinrich Voss. Coupling iterative subsystem solvers. 1999.
- [105] Christian Majenz. Entropy in quantum information theory–communication and cryptography. arXiv preprint arXiv:1810.10436, 2018.
- [106] Zoltán Ádám Mann. Optimization problems in system-level synthesis. 2012.
- [107] Damián Marelli, Mohsen Zamani, Minyue Fu, and Brett Ninness. Distributed kalman filter in a network of linear systems. Systems & Control Letters, 116:71–77, 2018.
- [108] Bernhard Maschke, Arjan van der Schaft, and Peter C. Breedveld. An instrinsic hamiltonian formulation of network dynamics: non-standard poisson structures and gyrators. 1991.
- [109] Alireza Mehrnia and Alan N. Willson. Optimal factoring of fir filters. *IEEE Transactions on Signal Processing*, 63:647–661, 2015.
- [110] Simon Milz, Felix A. Pollock, Thao P. Le, Giulio Chiribella, and Kavan Modi. Entanglement, non-markovianity, and causal non-separability. 2018.
- [111] F MINTERT, A CARVALHO, M KUS, and A BUCHLEITNER. Measures and dynamics of entangled states. *Physics Reports*, 415(4):207–259, Aug 2005.
- [112] Amaresh Mishra, Markus KR Fischer, and Peter Bäuerle. Metal-free organic dyes for dye-sensitized solar cells: From structure: Property relationships to design rules. *Angewandte Chemie International Edition*, 48(14):2474–2499, 2009.
- [113] Philip J. Morrison. On the hamilton-jacobi variational formulation of the vlasov equation. 2012.
- [114] Alexei Novikov and Karim Shikh Khalil. A stochastic lagrangian particle system for the navier-stokes equations. 2017.
- [115] Tomoki Ohsawa. Symmetry reduction of optimal control systems and principal connections. SIAM J. Control and Optimization, 51(1):96–120, 2013.
- [116] Norberto O Oldani and Claudio RM Baigún. Performance of a fishway system in a major south american dam on the parana river (argentina-paraguay). River Research and Applications, 18(2):171–183, 2002.
- [117] Norberto Oscar Oldani, Claudio Rafael Mariano Baigún, John Michael Nestler, and Richard Andrew Goodwin. Is fish passage technology saving fish resources in the lower la plata river basin? *Neotropical Ichthyology*, 5(2):89–102, 2007.
- [118] Juan-Pablo Ortega and Tudor S. Ratiu. Poisson reduction. 2005.
- [119] Sina Khoshfetrat Pakazad, Martin S. Andersen, Anders Hansson, and Anders Rantzer. Decomposition and projection methods for distributed robustness analysis of interconnected uncertain systems. 2013.
- [120] Fei Pan, Liang Qiu, and Zhi Liu. The complementarity relations of quantum coherence in quantum information processing. *Scientific Reports*, 7(1), Mar 2017.
- [121] Simon L Peyton Jones. The implementation of functional programming languages (prentice-hall international series in computer science). Prentice-Hall, Inc., 1987.
- [122] L.S. Pontryagin. Mathematical theory of optimal processes. May 2018.
- [123] Damian Raczyński and Włodzimierz Stanisławski. Frequency-weighted model order reduction combined with the model decomposition. *Journal of Theoretical and Applied Computer Science*, 11(1):3–12, 2017.
- [124] R. Radzyner. Adjoint sensitivity models and signal-flowgraph reversal. 1973.
- [125] Daniel Maximilian Reich. Efficient characterisation and optimal control of open quantum systems mathematical foundations and physical applications. 2015.
- [126] Danilo Jimenez Rezende and Shakir Mohamed. Variational inference with normalizing flows. In *ICML*, volume 37 of *JMLR Workshop and Conference Proceedings*, pages 1530–1538. JMLR.org, 2015.
- [127] Benni Reznik. Distillation of vacuum entanglement to epr pairs. 2000.

- [128] Sina Salek, Daniel Ebler, and Giulio Chiribella. Quantum communication in a superposition of causal orders. CoRR, abs/1809.06655, 2018.
- [129] Raffaele Santagati, Jianwei Wang, Antonio A. Gentile, Stefano Paesani, Nathan Wiebe, Jarrod R. McClean, Sam Morley-Short, Peter J. Shadbolt, Damien Bonneau, Joshua W. Silverstone, and et al. Witnessing eigenstates for quantum simulation of hamiltonian spectra. *Science Advances*, 4(1):eaap9646, Jan 2018.
- [130] Hampei Sasahara, Takayuki Ishizaki, Tomonori Sadamoto, Jun-ichi Imura, Henrik Sandberg, and Karl Henrik Johansson. Glocal control for network systems via hierarchical state-space expansion. In *CDC*, pages 6346–6351. IEEE, 2017.
- [131] Erwin Schrödinger. An undulatory theory of the mechanics of atoms and molecules. Physical review, 28(6):1049, 1926.
- [132] Ren'e Schuh and Jan Lunze. Stability analysis of networked systems with similar dynamics. In *ECC*, pages 4359–4364. IEEE, 2013.
- [133] Parikshit Shah, Badri Narayan Bhaskar, Gongguo Tang, and Benjamin Recht. Linear system identification via atomic norm regularization. In *CDC*, pages 6265–6270. IEEE, 2012.
- [134] Peter W. Shor. Capacities of quantum channels and how to find them. Math. Program., 97(1-2):311-335, 2003.
- [135] Per Sjövall and Thomas Abrahamsson. State-space model identification for component synthesis. In *Proceedings of the* 25th international modal analysis conference, Society for Experimental Mechanics, 2007.
- [136] ADAM C SNIDERMAN, MIREILLE E BROUCKE, and GABRIELE MT DELEUTERIO. Control of block circulant systems.
- [137] Akira Sone and Paola Cappellaro. Hamiltonian identifiability assisted by a single-probe measurement. *Physical Review* A, 95(2), Feb 2017.
- [138] Rupesh Kumar Srivastava, Klaus Greff, and Jürgen Schmidhuber. Highway networks. CoRR, abs/1505.00387, 2015.
- [139] Anton Stefanek, Richard A. Hayden, Mark Mac Gonagle, and Jeremy T. Bradley. Mean-field analysis of markov models with reward feedback. In ASMTA, volume 7314 of Lecture Notes in Computer Science, pages 193–211. Springer, 2012.
- [140] Mark Simon Tame. Measurement-based quantum information processing with imperfect operation. PhD thesis, Queen's University Belfast, UK, 2008.
- [141] Xiaoquan Tang and Long Zhang. Stability orthogonal regression for system identification. Systems & Control Letters, 117:30–36, 2018.
- [142] Xiaoquan Tang, Long Zhang, and Xiaolin Wang. Sparse augmented lagrangian algorithm for system identification. Neurocomputing, 330:403–411, 2019.
- [143] Christopher G. Timpson. Quantum information theory. Quantum Information Theory and the Foundations of Quantum Mechanics, page 45–73, Apr 2013.
- [144] la de Augusto Torre, Levy Eduardo Yeyati, and Sergio Schmukler. Living and dying with hard pegs: The rise and fall of argentina's currency board. *Policy Research Working Papers*, Feb 2003.
- [145] Rianne van den Berg, Leonard Hasenclever, Jakub M. Tomczak, and Max Welling. Sylvester normalizing flows for variational inference. In *UAI*, pages 393–402. AUAI Press, 2018.
- [146] Arjan van der Schaft and Bernhard Maschke. Conservation laws and lumped system dynamics. 2009.
- [147] Heinrich Voss. A symmetry exploiting lanczos method for symmetric toeplitz matrices. *Numerical Algorithms*, 25(1-4):377–385, 2000.
- [148] Heinrich Voss. A variant of the inverted lanczos method. BIT Numerical Mathematics, 41(5):1111–1120, 2001.
- [149] Heinrich Voss. A projection method for a rational eigenvalue problem in fluid-structure interaction. In *International Conference on Computational Science* (2), volume 2330 of *Lecture Notes in Computer Science*, pages 403–411. Springer, 2002.
- [150] Heinrich Voss. Iterative projection methods for sparse nonlinear eigenproblems. PAMM, 4(1):722–725, Dec 2004.
- [151] Heinrich Voss. A jacobi-davidson method for nonlinear eigenproblems. In *International Conference on Computational Science*, volume 3037 of *Lecture Notes in Computer Science*, pages 34–41. Springer, 2004.

- [152] Heinrich Voss. A new justification of the jacobidavidson method for large eigenproblems. 2007.
- [153] Heinrich Voss and Jörg Lampe. Second order arnoldi reduction application to some engineering problems. 2005.
- [154] Dilin Wang and Qiang Liu. Learning to draw samples: With application to amortized MLE for generative adversarial learning. *CoRR*, abs/1611.01722, 2016.
- [155] Jieci Wang and Jiliang Jing. Quantum decoherence in noninertial frames. Physical Review A, 82(3), Sep 2010.
- [156] Xudong Wang and Vassilis L. Syrmos. Nonlinear system identification and fault detection using hierarchical clustering analysis and local linear models. 2007 Mediterranean Conference on Control Automation, Jun 2007.
- [157] Yuanlong Wang, Daoyi Dong, Bo Qi, Jun Zhang, Ian R. Petersen, and Hidehiro Yonezawa. A quantum hamiltonian identification algorithm: Computational complexity and error analysis. *IEEE Trans. Automat. Contr.*, 63(5):1388–1403, 2018.
- [158] Yuanlong Wang, Daoyi Dong, Akira Sone, Ian R. Petersen, Hidehiro Yonezawa, and Paola Cappellaro. Quantum hamiltonian identifiability via a similarity transformation approach and beyond. CoRR, abs/1809.02965, 2018.
- [159] Mark M. Wilde. From classical to quantum shannon theory. CoRR, abs/1106.1445, 2011.
- [160] YUAN Xiaohu, WU Rebin, and LI Chunwen. Quantum process tomography based on distributed compressed sensing. Journal of Tsinghua University (Science and Technology), 57(10):1089–1095, 2017.
- [161] Ciann-Dong Yang and Fang-Bo Yeh. Identification, reduction, and refinement of model parameters by theeigensystem realization algorithm. *Journal of Guidance, Control, and Dynamics*, 13(6):1051–1059, 1990.
- [162] Shi yao Hou, Hang Li, and Gui-Lu Long. Experimental quantum hamiltonian identification from measurement time traces. 2017.
- [163] J Yin, H Voss, and P Chen. Combining automated multilevel sub-structuring and subspace iteration for huge gyroscopic eigenproblems. In *Proceedings of the International Conference on Scientific Computing (CSC)*, page 1. The Steering Committee of The World Congress in Computer Science, Computer, 2012.
- [164] Chengpu Yu, Lennart Ljung, and Michel Verhaegen. Gray box identification of state-space models using difference of convex programming. *CoRR*, abs/1611.04359, 2016.
- [165] Chengpu Yu, Michel Verhaegen, and Anders Hansson. Subspace identification of local systems in one-dimensional homogeneous networks. *IEEE Trans. Automat. Contr.*, 63(4):1126–1131, 2018.
- [166] Yao Yue and Karl Meerbergen. Parametric model order reduction of damped mechanical systems via the block arnoldi process. *Appl. Math. Lett.*, 26(6):643–648, 2013.
- [167] Shuangfei Zhai, Yu Cheng, Weining Lu, and Zhongfei Zhang. Deep structured energy based models for anomaly detection. In *ICML*, volume 48 of *JMLR Workshop and Conference Proceedings*, pages 1100–1109. JMLR.org, 2016.
- [168] Shuangfei Zhai, Yu Cheng, Zhongfei (Mark) Zhang, and Weining Lu. Doubly convolutional neural networks. In NIPS, pages 1082–1090, 2016.
- [169] Junbo Jake Zhao, Michaël Mathieu, and Yann LeCun. Energy-based generative adversarial network. *CoRR*, abs/1609.03126, 2016.
- [170] Zachary M. Ziegler and Alexander M. Rush. Latent normalizing flows for discrete sequences. In *ICML*, volume 97 of *Proceedings of Machine Learning Research*, pages 7673–7682. PMLR, 2019.