Guoming Tang, Weixiang Jiang, Zhifeng Xu, **Fangming Liu**, Kui Wu, [“NIPD: Non-Intrusive Power Disaggregation in Legacy Datacenters”](https://fangmingliu.github.io/files/tc2016-NIPD.pdf), [IEEE Transactions on Computers](http://www.computer.org/tc), vol.66, no.2, 2017.

Weixiang Jiang, **Fangming Liu**, Guoming Tang, Kui Wu and Hai Jin, [“Virtual Machine Power Accounting with Shapley Value”](https://fangmingliu.github.io/files/VMPower-icdcs2017.pdf), in Proc. of IEEE [**ICDCS**](https://icdcs2017.gatech.edu/), Atlanta, GA, USA, June, 2017.

Weixiang Jiang, Shaolei Ren, **Fangming Liu**, Hai Jin, [“Non-IT Energy Accounting in Virtualized Datacenter”](https://fangmingliu.github.io/files/icdcs18-LEAPS-FangmingLiu.pdf), in Proc. of IEEE [**ICDCS**](http://icdcs2018.ocg.at/) (78 out of 378 submissions, acceptance ratio: 20%), Vienna, Austria, July 2-5, 2018.

Guoming Tang, Weixiang Jiang, Zhifeng Xu, **Fangming Liu**, and Kui Wu, [“Zero-Cost, Fine-Grained Power Monitoring of Datacenters Using Non-Intrusive Power Disaggregation”](https://dl.acm.org/citation.cfm?id=2814728), in Proc. of [**ACM/IFIP/USENIX Middleware 2015**](http://2015.middleware-conference.org/program/), **(ONLY 23 accepted out of 120 submissions)**, December, Vancouver, Canada, 2015.

Zhi Zhou, **Fangming Liu**, Ruolan Zou, Jiangchuan Liu, Hong Xu, Hai Jin, [“Carbon-aware-trans Online Control of Geo-Distributed Cloud Services”](https://ieeexplore.ieee.org/document/7345588/), [IEEE Transactions on Parallel and Distributed Systems](http://www.computer.org/portal/web/tpds/home), Volume 27, Issue 9, September 2016.

Zhi Zhou, **Fangming Liu**, Shutong Chen, Zongpeng Li, [“A Truthful and Efficient Incentive Mechanism for Demand Response in Green Datacenters”](https://fangmingliu.github.io/files/tpds2018-DR-datacenter.pdf), to appear in [IEEE Transactions on Parallel and Distributed Systems](http://www.computer.org/portal/web/tpds/home), 2019.

Zhi Zhou, **Fangming Liu**, Zongpeng Li, [“Bilateral Electricity Trade Between Smart Grids and Green Datacenters: Pricing Models and Performance Evaluation”](https://fangmingliu.github.io/files/jsac2016-fangmingliu.pdf), [IEEE Journal on Selected Areas in Communications (JSAC)](http://www.jsac.ucsd.edu/index.html), Series on Green Communications and Networking, Volume: 34, Issue: 12 Pages: 3993 - 4007, December 2016.

Shutong Chen, Zhi Zhou, **Fangming Liu**, Zongpeng Li, Shaolei Ren, [“CloudHeat: An Efficient Online Market Mechanism for Datacenter Heat Harvesting”](https://fangmingliu.github.io/files/TOMPECS18-cloudheat-FangmingLiu.pdf), [ACM Transactions on Modeling and Performance Evaluation of Computing Systems (TOMPECS)](http://tompecs.acm.org/), Vol. 3, No. 3, Aug. 2018.

Song Wu, Yang Chen, Xinhou Wang, Hai Jin, **Fangming Liu**, Haibao Chen, Chuxiong Yan, [“Precise Power Capping for Latency-Sensitive Applications in Datacenter”](https://fangmingliu.github.io/files/tsc2018-datacenter-power-capping.pdf), to appear in [IEEE Transactions on Sustainable Computing](https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=7274860), 2019.

Zhaojie Niu, Bingsheng He, and **Fangming Liu**, [“JouleMR: Towards Cost-Effective and Green-Aware Data Processing Frameworks”](https://ieeexplore.ieee.org/document/7827156), [IEEE Transactions on Big Data](https://www.computer.org/web/tbd), Vol. 4, No. 2, Jun. 2018.

Zhaojie Niu, Bingsheng He, and **Fangming Liu**, [“Not All Joules are Equal: Towards Energy-Efficient and Green-Aware Data Processing Frameworks”](https://fangmingliu.github.io/files/IC2E16-GreemMR.pdf), in Proc. of [IEEE IC2E 2016 (IEEE International Conference on Cloud Engineering)](http://conferences.computer.org/IC2E/2016/), **Best Paper Runner-Up**, April 4-8, Berlin, Germany, 2016.

Zhifeng Xu, **Fangming Liu**, Tao Wang, and Hong Xu, [“Demystifying the Energy Efficiency of Network Function Virtualization”](https://fangmingliu.github.io/files/iwqos16-NFV-fangmingliu.pdf), in Proc. of IEEE/ACM **[IWQoS](http://www.ieee-iwqos.org/)**, **Best Paper Candidate**, perhaps the 1st study on energy aspect of NFV in the literature, (only 27 are accepted as Full Papers, which results in an acceptance rate of 20.6%), Beijing, June, 2016.

Youshi Wang, Fa Zhang, Ce Chi, Shaolei Ren, **Fangming Liu**, Rui Wang, Zhiyong Liu, [“A Market-oriented Incentive Mechanism for Emergency Demand Response in Colocation Data Centers”](https://fangmingliu.github.io/files/sustainable-computing-datacenter-EDR-2019.pdf), [Sustainable Computing: Informatics and Systems](https://authors.elsevier.com/c/1Yc0Q7sdZtOW9-), Vol. 22, pp. 13-25, Jun. 2019.

Youshi Wang, Fa Zhang, Shaolei Ren, **Fangming Liu**, Rui Wang, Zhiyong Liu, [“Energy Efficiency in Colocation Data Centers: A Joint Incentive Mechanism Approach “](https://fangmingliu.github.io/files/IGSC-2017.pdf), in [The 8th International Green and Sustainable Computing Conference **(IGSC)**](http://igsc.eecs.wsu.edu/), Orlando, Florida, USA, October 23-25, 2017.

周知, **刘方明**, Zhi Zhou, Fangmin Liu,  [“面向多租户数据中心资源回收利用的能效激励机制”](http://engine.scichina.com/publisher/scp/journal/SSI/doi/10.1360/SSI-2019-0098?slug=abstract), 中国科学: 信息科学, 2019.（CCF A类）

**刘方明**, 姜炜祥, Fangmin Liu, Weixiang Jiang,  [绿色数据中心“新基建”如何更“Cool”](https://dl.ccf.org.cn/institude/institudeDetail?id=4971336111851520&_ack=1), CCCF (中国计算机学会通讯), 2020年第6期.

**Fangming Liu**, Zhi Zhou, Hai Jin, Bo Li, Baochun Li, Hongbo Jiang, [“On Arbitrating trans the Power-Performance Tradeoff in SaaS Clouds”](https://ieeexplore.ieee.org/document/6582405), [IEEE Transactions on Parallel and Distributed Systems](http://www.computer.org/portal/web/tpds/home), vol. 25, no. 10, 2014.

Zhi Zhou, **Fangming Liu**, Hai Jin, Bo Li, Baochun Li, Hongbo Jiang, [“On Arbitrating conf the Power-Performance Tradeoff in SaaS Clouds”](https://ieeexplore.ieee.org/document/6566875), in Proc. of IEEE [**INFOCOM**](http://infocom.di.unimi.it/) (Acceptance ratio: 17%), April, Italy, 2013.

Zhi Zhou, **Fangming Liu**, Zongpeng Li, and Hai Jin, [“When Smart Grid Meets Geo-distributed Cloud: An Auction Approach to Datacenter Demand Response”](https://ieeexplore.ieee.org/document/7218656), in Proc. of IEEE [**INFOCOM**](http://infocom2015.ieee-infocom.org/program) (double-blind review with Acceptance ratio: 19%), April-May, Hong Kong, 2015.

邓维, 刘方明, 金海, 李丹, Wei Deng, Fangmin Liu, Hai Jin, Dan Li, [“云计算数据中心的新能源应用：研究现状与趋势”](http://cjc.ict.ac.cn/quanwenjiansuo/2013-3/dw.pdf), 计算机学报, Vol. 36, No. 3, Mar. 2013.（CCF A类）

Zhi Zhou, **Fangming Liu**, Bo Li, Baochun Li, Hai Jin, Ruolan Zou, and Zhiyong Liu, [“Fuel Cell Generation in Geo-Distributed Cloud Services: A Quantitative Study”](https://ieeexplore.ieee.org/document/6888882), in Proc. of IEEE [**ICDCS**](http://lsd.ls.fi.upm.es/icdcs2014), **(Acceptance ratio: 13%, only 66 accepted out of over 500+ submissions)**, June-July, Madrid, Spain, 2014.

Wei Deng, **Fangming Liu**, Hai Jin, Chuan Wu, [“SmartDPSS: Cost-Minimizing Multi-source Power Supply for Datacenters with Arbitrary Demand”](https://ieeexplore.ieee.org/document/6681611), in Proc. of IEEE [**ICDCS’2013**](http://www.temple.edu/cis/icdcs2013/) **(Acceptance ratio: 13%, only 61 accepted out of 484 submissions)**, Philadelphia, USA, July, 2013.

Wei Deng, **Fangming Liu**, Hai Jin, Bo Li, Dan Li, [“Harnessing Renewable Energy in Cloud Datacenters: Opportunities and Challenges”](https://ieeexplore.ieee.org/document/6724106), **IEEE Network Magazine** (Impact Factor: 3.72), vol. 28, no. 1, Jan. 2014.

Zhi Zhou, **Fangming Liu**, Yong Xu, Ruolan Zou, Hong Xu, John C.S. Lui, Hai Jin, [“Carbon-aware-conf Load Balancing for Geo-distributed Cloud Services”](https://ieeexplore.ieee.org/document/6730766), in Proc. of IEEE [**MASCOTS**](http://mascots13.conference.nicta.com.au/) (only 44 accepted out of 163 submissions worldwide), August, San Francisco, USA, 2013.

Wei Deng, **Fangming Liu**, Hai Jin, Xiaofei Liao, Haikun Liu, [“Reliability-aware Server Consolidation for Balancing Energy-Lifetime Tradeoff in Virtualized Cloud Datacenters”](https://dl.acm.org/citation.cfm?id=2854789), [International Journal of Communication Systems (IJCS)](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1099-1131), 2014.

Wei Deng, **Fangming Liu**, Hai Jin, Xiaofei Liao, Haikun Liu, [“Lifetime or Energy: Consolidating Servers with Reliability Control in Virtualized Cloud Datacenters”](https://ieeexplore.ieee.org/document/6427550), **Best Paper Nominee**, in Proc. of [IEEE CloudCom](http://2012.cloudcom.org/), Taipei, Taiwan, December 2012.

Zhi Zhou, **Fangming Liu**, and Zongpeng Li, [“Pricing Bilateral Electricity Trade between Smart Grids and Hybrid Green Datacenters”](https://dl.acm.org/doi/10.1145/2745844.2745884), in Proc. of ACM [**SIGMETRICS**](http://sigmetrics.org/sigmetrics2015/), poster paper (only **57 papers, including 25 poster papers,** were accepted among 239 submissions), June, Portland, Oregon, USA, 2015.

Wei Deng, **Fangming Liu**, Hai Jin, Chuan Wu, Xue Liu, [“MultiGreen: Cost-Minimizing Multi-source Datacenter Power Supply with Online Control”](https://dl.acm.org/doi/10.1145/2487166.2487183), in Proc. of [**ACM e-Energy**](http://conferences.sigcomm.org/eenergy/2013/) (organized by ACM SIGCOMM Community), UC Berkeley, May 2013.

Wei Deng, **Fangming Liu**, Hai Jin, Xiaofei Liao, [“Online Control of Datacenter Power Supply Under Uncertain Demand and Renewable Energy”](https://ieeexplore.ieee.org/document/6655227), in Proc. of IEEE [ICC](http://www.ieee-icc.org/), Budapest, Hungary, Jun. 2013.

Qiangyu Pei, Shutong Chen, Qixia Zhang, Xinhui Zhu, **Fangming Liu**, Ziyang Jia, Yishuo Wang, Yongjie Yuan, [“CoolEdge: Hotspot-relievable Warm Water Cooling for Energy-efficient Edge Datacenters”](https://fangmingliu.github.io/files/ASPLOS22-CoolEdge.pdf), in Proc. of ACM [**ASPLOS**](https://asplos-conference.org/), **80 out of 397 submissions (acceptance ratio: 20%)**, Feb 28-March 4, 2022, Lausanne, Switzerland.

Xinhui Zhu, Weixiang Jiang, **Fangming Liu**, Qixia Zhang, Li Pan, Qiong Chen, and Ziyang Jia, [“Heat to Power: Thermal Energy Harvesting and Recycling for Warm Water-Cooled Datacenters”](https://fangmingliu.github.io/files/H2P-camera-ready.pdf), in Proc. of ACM/IEEE [**ISCA**](https://iscaconf.org/isca2020/), **77 out of 421 submissions (acceptance ratio: 18%)**, May 30 - June 3, 2020, Valencia, Spain. [(Video Presentation)](https://fangmingliu.github.io/files/ISCA20-H2P-v2.mp4)

Weixiang Jiang, Ziyang Jia, Sirui Feng, **Fangming Liu**, and Hai Jin, [“Fine-grained Warm Water Cooling for Improving Datacenter Economy”](https://fangmingliu.github.io/files/ISCA2019-Datacenter-WaterCooling-FangmingLiu.pdf), in Proc. of ACM/IEEE [**ISCA**](https://iscaconf.org/isca2019) co-located with [ACM FCRC (Federated Computing Research Conference)](https://fcrc.acm.org/), **62 out of 365 submissions (acceptance ratio: 16.9%)**, 22-26 June 2019, Phoenix, Arizona, USA. ([**Lightning Talk Video on Youtube**](https://www.youtube.com/watch?v=K9sR9zOSVaU))

Zimu Zheng, Qiong Chen, Fan Chen, Nan Guan, Arun Vishwanath, Dan Wang, **Fangming Liu**, [“Data Driven Chiller Sequencing for Reducing HVAC Electricity Consumption in Commercial Buildings”](https://fangmingliu.github.io/files/eenergy18-edge%20computing-case.pdf), in Proc. of [**ACM e-Energy**](http://conferences.sigcomm.org/eenergy/2018/) (supported by ACM SIGCOMM Community), **Best Paper Award**, Karlsruhe, Germany, June 2018.