Title, Authors, Year	Paper ref	Lab/Group	Target	Scale	Study Type	Experiments	Mechanism	Explicit Node Variability	Static/Dynamic	Evaluation Metric	Job Type
Sarood et al. 2014 "Maximizing Throughput of Over-provisioned HPC Data Centers Under a Strict Power Budget"	1	UIUC	Power Capping	System Level	Real	38-nodes cluster + Simulator	configuration + RAPL	No	Dynamic	Job throughput	moldable + malleable
Patki et al. 2013 "Exploring Hardware Overprovisioning in Power-Constrained, High Performance Computing"	2	LLNL	Power Capping	System Level	Real	32-nodes cluster	configuration + RAPL	No	Static	NA	moldable
Patki et al. 2015 "Practical Resource Management in Power-Constrained, High Performance Computing"	3	LLNL	Power Capping	System Level	Real	64-nodes cluster	configuration + RAPL	No	Static	Job turnaround + sys util	moldable
Etinski et al. 2010 "Optimizing Job Performance Under a Given Power Constraint In HPC Centers"	4	BSC	Power Capping	System Level	Prototype	Simulator	DVFS	No	Static	BSLD	rigid
Etinski et al. 2011 "Parallel job scheduling for power constrained HPC systems"	5	BSC	Power Capping	System Level	Prototype	Simulator	DVFS	No	Static	BSLD	rigid
Etinski et al. 2010 "Utilization driven power-aware parallel job scheduling"	6	BSC	Power Capping	System Level	Prototype	Simulator	DVFS	No	Static	BSLD	rigid
Rountree et al. 2009 "Adagio: Making DVS Practical for Complex HPC Applications"	7	LLNL	Power Capping	Application Level	Real	16-nodes cluster	DVFS	No	both	EtS + TtS	rigid
Hsu et Al 2005 "A Power-Aware Run-Time System for High-Performance Computing"	9	LANL	Power Capping	System Level	Real	small 8-nodes Cluster	DVFS	No	Static	BSLD	rigid
Bodas et al 2014 "Simple Power-Aware Scheduler to limit power consumption by HPC system within a budget"	10	Intel	Power Capping	System Level	Real	small 8-nodes Cluster	RAPL	No	Dynamic	NA	rigid
Ellsworth et al 2015 "Dynamic Power Sharing for Higher Job Throughput"	11	LLNL	Power Capping	System Level	Real	128-nodes cluster + Simulator	RAPL	No	Dynamic	NA	rigid
Borghesi et al 2015 "Power Capping in High Performance Computing Systems"	27	UNIBO + Cineca	Power Capping	System Level	Prototype	Simulator	Job execution order + Allocation	No	Static	BSLD	rigid
Borghesi et al 2015 "MS3: a Mediterranean-Stile Job Scheduler for Supercomputers - do less when it's too hot!"	28	UNIBO + Cineca	Power Capping + Energy-Efficiency	System Level	Prototype	Simulator	Job execution order + Allocation	No	Static	BSLD + KWh	rigid
Bailey et al. 2014 "Adaptive Configuration Selection for Power-Constrained Heterogeneous Systems"	12	LLNL	Power Capping	Application Level	Real	Single Node	Configuration	No	Static	FLOPs	moldable
Shoukourian et al 2015 "Power Variation Aware Configuration Adviser for Scalable HPC Schedulers"	13	LRZ	Power Capping	System Level	Exploratory	HPC System	Configuration	No	Static	EtS + KWh	rigid
Marathe et al 2015 "A Run-Time System for Power-Constrained HPC Applications"	14	LLNL	Power Capping	System Level	Real	1200-nodes cluster	RAPL	No	Dynamic	TtS	moldable
Wilde et al. 2015 "Taking Advantage of Node Power Variation in Homogenous HPC Systems to Save Energy"	15	LRZ	Power Capping	System Level	Exploratory	HPC System	Job Allocation	Yes	NA	KWh	moldable
Inadomi et al 2015 "Analyzing and Mitigating the Impact of Manufacturing Variability in Power-Constrained Supercomputing"	16	LLNL + RIIT	Power Capping	System Level	Real	1920-modules cluster	DVFS / RAPL	Yes	Static	NA	rigid
Gandhi et al. 2009 "Power Capping Via Forced Idleness"	17	CMU+IBM Researc	Power Capping	System Level	Exploratory	Single Node	DVFS	No	Static	Response time	rigid
Mammela et al. 2012 "Energy-aware job scheduler for high-performance computing"	18	VTT + JSC	Power Capping	System Level	Prototype	Simulator	Turn off idle nodes	No	NA	NA	rigid
Rountree et al. 2007 "Bounding Energy Consumption in Large-Scale MPI Programs"	19	LLNL	Power Capping	Application Level	Real	8-nodes cluster	Task-level Sched +DVFS	No	NA	EtS	rigid
Bailey et al. 2015 "Finding the Limits of Power-Constrained Application Performance"	20	LLNL	Power Capping	Application Level	Exploratory	1296-nodes cluster	Task-level Sched + Configuration	No	NA	NA	moldable
Hikita et al. 2008 "Saving 200 kW and $200 K/year by Power-aware Job/Machine Scheduling"	21	Kyoto University	Cost-Efficiency + Energy-Efficiency	System Level	Real	11-nodes cluster	Turn off idle nodes	No	NA	KWatt	rigid
Yang et al. 2013 "Integrating Dynamic Pricing of Electricity into Energy Aware Scheduling for HPC Systems"	22	IIT + ANL	Cost-Efficiency + Energy-Efficiency	System Level	Prototype	Simulator	Job execution order	No	NA	KWatt	rigid
Durillo et al. 2013 "Multi-objective energy-efficient workflow scheduling using list-based heuristics"	23	UIBK	Energy-Efficiency	Application Level	Prototype	Simulator	Job execution order	Yes	NA	EtS+ TtS	rigid
Gomez-Martin et al. 2016 "Performance and energy aware scheduling simulator for HPC: evaluating different resource selection metho	24	CénitS + UNEX	Energy-Efficiency	System Level	Prototype	Simulator	Job execution order	Yes	NA	EtS + TtS	rigid
Zhou et Al 2014 "Reducing Energy Costs for IBM Blue Gene/P via Power-Aware Job Scheduling"	25	IIT + ANL	Cost-Efficiency + Energy-Efficiency	System Level	Prototype	Simulator	Job execution order	No	NA	KWatt	rigid
Raghu et Al. 2013 "PAAS: Power Aware Algorithm for Scheduling in High Performance Computing"	26	C-DAC	Energy-Efficiency	System Level	Real	5-nodes cluster	Job execution order + DVFS	No	Static	KWatt	rigid
Auweter et al 2014 "A Case Study of Energy Aware Scheduling on SuperMUC"	8	LRZ	Energy-Efficiency	System Level Ene	Real	HPC System	DVFS	No	Static	EtS + EDP + TtS	rigid

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