**RTSOPS Impact Analysis**

**Method**

* “Relevant” citations from Google scholar (a single level)
* “Relevant” citations were decided as follows:
  + For open problems, looked at the introduction of work that cited the RTSOPS paper to see if they actually address some part of the open problems or at the least if the paper is related to the open problems
  + For status reports, present all the citations

**Statistics**

* In all 10 out of 41 RTSOPS papers had “relevant” citations
  + RTSOPS 2012 (4 out of 11 published papers)
  + RTSOPS 2013 (2 out of 10 published papers)
  + RTSOPS 2014 (1 out of 8 published papers)
  + RTSOPS 2015 (3 out of 12 published papers)

**Observations**

* Very few status reports when compared to open problems (awareness is lacking)
  + In fact it seems status reports are very valuable (quite a few citations)
* Spotted follow-on papers from the same authors as the RTSOPS paper that addressed some of the open problems, but failed to cite the RTSOPS paper

**RTSOPS 2012**

**Open Problems**

1. **Title**: Exploiting online WCET estimates

**Authors**: Sverre Hendseth and Giorgio Buttazzo

**Research Problem**: Online job-level WCET estimation based on program state, input data etc (WCET computed at job’s release time), estimator runs when job is released

**Cited by**:

* (masters thesis, line detection in images considered as application, allows task abortions to ensure deadlines) Using online worst-case execution time analysis and alternative tasks in real time systems

FB Haugli - 2014

1. **Title**: Can Randomness Buy Clairvoyance? A Look into Stochastic Scheduling of Mixed Criticality Real-Time Job Systems with Execution Time Distributions

**Authors**: Bader Alahmad and Sathish Gopalakrishnan

**Research Problem**: Stochastic mixed-criticality scheduling with probabilistic execution time estimates for jobs, scheduler probabilistically allocates resource based on realized behavior.

**Cited by**:

* (stochastic imprecise computations for low-criticality jobs in mixed-criticality scheduling) [What if we would degrade LO tasks in mixed-criticality systems?](http://os.inf.tu-dresden.de/~voelp/pub/qas_mc.pdf)

[M Völp](https://scholar.google.com.sg/citations?user=yszaBO0AAAAJ&hl=en&oi=sra) – RTAS (WiP), 2014

1. **Title**: Energy Saving Exploiting the Limited Preemption Task Model

**Authors**: Mario Bambagini, Giorgio Buttazzo and Marko Bertogna

**Research Problem**: limited preemption fixed-priority scheduling with Dynamic Frequency Scaling and/or Dynamic Power Management

**Cited by**:

* (PhD thesis) [Energy Saving in Real-Time Embedded Systems](http://www.mario-bambagini.it/web/sections/research/thesis_slides.pdf)

[M Bambagini](https://scholar.google.com.sg/citations?user=DynIN1MAAAAJ&hl=en&oi=sra) - 2014

1. **Title**: Heterogeneous multiprocessor compositional real-time scheduling

**Authors**: Joao Pedro Craveiro and Jose Rufino

**Research Problem**: Resource model for heterogeneous multiprocessors

**Cited by**:

* (Propose a periodic resource model) [Towards Compositional Hierarchical Scheduling Frameworks on Uniform Multiprocessors](http://repositorio.ul.pt/handle/10451/14090)

[JP Craveiro](https://scholar.google.com.sg/citations?user=0BWvegcAAAAJ&hl=en&oi=sra), [J Rufino](https://scholar.google.com.sg/citations?user=phen2ukAAAAJ&hl=en&oi=sra), Technical Report, 2012

**RTSOPS 2013**

**Open Problems**

1. **Title**: Energy-aware scheduling for tasks with mixed energy requirements

**Authors**: [M Bambagini](https://scholar.google.com.sg/citations?user=DynIN1MAAAAJ&hl=en&oi=sra), [G Buttazzo](https://scholar.google.com.sg/citations?user=33CH6WUAAAAJ&hl=en&oi=sra)

**Research Problem**: Tasks are modeled with monotonic WCETs (to account for portions of execution that do not scale with speed, e.g., I/O)

**Cited by**:

### (PhD thesis) Energy Saving in Real-Time Embedded Systems

[M Bambagini](https://scholar.google.com.sg/citations?user=DynIN1MAAAAJ&hl=en&oi=sra) - 2014

### (Discussion paper on job scheduling) Machine speed scaling by adapting methods for convex optimization with submodular constraints

A Shioura, NV Shakhlevich, [VA Strusevich](https://scholar.google.com.sg/citations?user=YrmLWZEAAAAJ&hl=en&oi=sra) - 2015

### (energy consumption models for sensor nodes) Analysis and improvements in energy consumption models for rts

CS Stângaciu, AM Horvath, MV Micea, IEEE SACI, 2015

### On the energy-aware partitioning of real-time tasks on homogeneous multi-processor systems

[M Bambagini](https://scholar.google.com.sg/citations?user=DynIN1MAAAAJ&hl=en&oi=sra), J Lelli, G Buttazzo, ICEAC 2013

**Status Reports**

1. **Title**: Improvements to Static Probabilistic Timing Analysis for Systems with Random Cache Replacement Policies

**Authors**: Robert I. Davis

**Research Problem**: SPTA status report

**Cited by**:

### Static probabilistic timing analysis for real-time systems using random replacement caches

[S Altmeyer](https://scholar.google.com.sg/citations?user=O5JtLZsAAAAJ&hl=en&oi=sra), [L Cucu-Grosjean](https://scholar.google.com.sg/citations?user=rHvM_eUAAAAJ&hl=en&oi=sra), RI Davis, Real-Time Systems, 2015

### Randomized caches considered harmful in hard real-time systems

[J Reineke](https://scholar.google.com.sg/citations?user=s1otaQ0AAAAJ&hl=en&oi=sra) - Leibniz Transactions on Embedded Systems, 2014

### On the correctness, optimality and precision of static probabilistic timing analysis

[S Altmeyer](https://scholar.google.com.sg/citations?user=O5JtLZsAAAAJ&hl=en&oi=sra), RI Davis, DATE 2014

**RTSOPS 2014**

**Status Reports**

1. **Title**: Progress on static probabilistic timing analysis for systems with random cache replacement policies

**Authors**: [S Altmeyer](https://scholar.google.com.sg/citations?user=O5JtLZsAAAAJ&hl=en&oi=sra), [L Cucu-Grosjean](https://scholar.google.com.sg/citations?user=rHvM_eUAAAAJ&hl=en&oi=sra), [RI Davis](https://scholar.google.com.sg/citations?user=xjVBcr4AAAAJ&hl=en&oi=sra), B Lesage

**Research Problem**: SPTA with random cache replacement policies

**Cited by**:

* Randomized caches can be pretty useful to hard real-time systems

E Mezzetti, M Ziccardi, T Vardanega… Leibniz Transactions, 2015

**RTSOPS 2015**

**Open Problems**

1. **Title**: Analysis of self-interference within DAG tasks

**Authors**: J Fonseca, [V Nélis](https://scholar.google.com.sg/citations?user=uCha__4AAAAJ&hl=en&oi=sra), [G Nelissen](https://scholar.google.com.sg/citations?user=ZmhqeSMAAAAJ&hl=en&oi=sra), [LM Pinho](https://scholar.google.com.sg/citations?user=0C7-0K4AAAAJ&hl=en&oi=sra)

**Research Problem**: Schedulability analysis with self-interference from sub-tasks (specifically global scheduling)

**Cited by**:

* (G-EDF and G-DM analysis with self-interference) Response time analysis for G-EDF and G-DM scheduling of sporadic DAG-tasks with arbitrary deadline

A Parri, [A Biondi](https://scholar.google.com/citations?user=j8JFI7UAAAAJ&hl=en&oi=sra), [M Marinoni](https://scholar.google.com/citations?user=EKZMC6AAAAAJ&hl=en&oi=sra), RTNS 2015

1. **Title**: Online admission of parallel real-time tasks

**Authors**: [C Maia](https://scholar.google.com.sg/citations?user=Kk6CLkQAAAAJ&hl=en&oi=sra), [L Nogueira](https://scholar.google.com.sg/citations?user=bBUE62gAAAAJ&hl=en&oi=sra), [LM Pinho](https://scholar.google.com.sg/citations?user=0C7-0K4AAAAJ&hl=en&oi=sra)

**Research Problem**: Same as above, except the focus here is on online admission control

**Cited by**:

* (Simple polynomial time test) Response time analysis for G-EDF and G-DM scheduling of sporadic DAG-tasks with arbitrary deadline

A Parri, [A Biondi](https://scholar.google.com.sg/citations?user=j8JFI7UAAAAJ&hl=en&oi=sra), [M Marinoni](https://scholar.google.com.sg/citations?user=EKZMC6AAAAAJ&hl=en&oi=sra), RTNS 2015

1. **Title**: How do we prove that probabilistic worst case response time is a Gumbel?

**Authors**: [AG Gogonel](https://scholar.google.com.sg/citations?user=Gabl_z8AAAAJ&hl=en&oi=sra), [L Cucu-Grosjean](https://scholar.google.com.sg/citations?user=rHvM_eUAAAAJ&hl=en&oi=sra)

**Research Problem**: A formal proof for showing that pWCRT distributions conform to the Gumbell distribution

**Cited by**:

### (experimental evaluation of different statistical approaches) Study of the reliability of statistical timing analysis for real-time systems

[D Maxim](https://scholar.google.com.sg/citations?user=TR5wnT8AAAAJ&hl=en&oi=sra), [F Soboczenski](https://scholar.google.com.sg/citations?user=rQ-RYCEAAAAJ&hl=en&oi=sra), [I Bate](https://scholar.google.com.sg/citations?user=4HAUfNoAAAAJ&hl=en&oi=sra), [E Tovar](https://scholar.google.com.sg/citations?user=d6y9LBMAAAAJ&hl=en&oi=sra), RTNS 2015