

# Publications by Simon Bliudze

April 9, 2018

## Journal publications

- [1] Simon Bliudze, Sébastien Furic, Joseph Sifakis, and Antoine Viel. “Rigorous Design of Cyber-Physical Systems: Linking Physicality and Computation”. In: *International Journal on Software and System Modeling* (2017). DOI: 10.1007/s10270-017-0642-5.
- [2] Simon Bliudze, Anastasia Mavridou, Radoslaw Szymanek, and Alina Zolotukhina. “Exogenous coordination of concurrent software components with JavaBIP”. In: *Software: Practice and Experience* 47.11 (Nov. 2017)., pp. 1801–1836. ISSN: 1097-024X. DOI: 10.1002/spe.2495.
- [3] Kasper Dokter, Sung-Shik T. Q. Jongmans, Farhad Arbab, and Simon Bliudze. “Combine and conquer: Relating BIP and Reo”. In: *J. Log. Algebr. Meth. Program.* 86.1 (2017)., pp. 134–156. DOI: 10.1016/j.jlamp.2016.09.008.
- [4] Romain Edelmann, Simon Bliudze, and Joseph Sifakis. “Functional BIP: Embedding Connectors in Functional Programming”. In: *J. Log. Algebr. Meth. Program.* 92 (2017)., pp. 19–44. DOI: 10.1016/j.jlamp.2017.06.003.
- [5] Anastasia Mavridou, Eduard Baranov, Simon Bliudze, and Joseph Sifakis. “Configuration logics: Modeling architecture styles”. In: *J. Log. Algebr. Meth. Program.* 86.1 (2017)., pp. 2–29. DOI: 10.1016/j.jlamp.2016.05.002.
- [6] Maaz Mashood Mohiuddin, Wajeb Saab, Simon Bliudze, and Jean-Yves Le Boudec. “Axi: Detection and Recovery for Delay and Crash Faults in Real-Time Control Systems”. In: *IEEE Transactions on Industrial Informatics* PP.99 (2017). Open access, pp. 1–1. DOI: 10.1109/TII.2017.2772219.
- [7] Paul Attie, Eduard Baranov, Simon Bliudze, Mohamad Jaber, and Joseph Sifakis. “A General Framework for Architecture Composability”. In: *Formal Aspects of Computing* 18.2 (Apr. 2016). Open access, pp. 207–231. DOI: 10.1007/s00165-015-0349-8.
- [8] Eduard Baranov and Simon Bliudze. “Offer semantics: Achieving compositionality, flattening and full expressiveness for the glue operators in BIP”. In: *Science of Computer Programming* 109.0 (2015)., pp. 2–35. ISSN: 0167-6423. DOI: 10.1016/j.scico.2015.05.011.
- [9] Borja Fernández Adiego, Dániel Darvas, Enrique Blanco Viñuela, Jean-Charles Tournier, Simon Bliudze, Jan Olaf Blech, and Víctor Manuel González Suárez. “Applying model checking to industrial-sized PLC programs”. In: *IEEE Transactions on Industrial Informatics* 11.6 (Oct. 2015)., pp. 1400–1410. DOI: 10.1109/TII.2015.2489184.
- [10] Simon Bliudze and Joseph Sifakis. “Causal semantics for the algebra of connectors”. In: *Formal Methods in System Design* 36.2 (June 2010)., pp. 167–194. DOI: 10.1007/s10703-010-0091-z.
- [11] Simon Bliudze and Daniel Krob. “Modelling of Complex Systems: Systems as dataflow machines”. In: *Fundamenta Informaticae* 91 (2009)., pp. 1–24. DOI: 10.3233/FI-2009-0001.
- [12] Simon Bliudze and Joseph Sifakis. “The Algebra of Connectors — Structuring Interaction in BIP”. In: *IEEE Transactions on Computers* 57.10 (2008)., pp. 1315–1330. ISSN: 0018-9340. DOI: 10.1109/TC.2008.26.

- [13] Simon Bliudze and Daniel Krob. “A combinatorial approach to evaluation of reliability of the receiver output for BPSK modulation with spatial diversity”. In: *Electronic Journal of Combinatorics* 13.1 (Jan. 2006). Paper #R2, 31 pages.
- [14] Simon Bliudze and Daniel Krob. “Towards a Functional Formalism for Modelling Complex Industrial Systems”. In: *ComPlexUs, Special Issue: Complex Systems – European Conference – November 2005 – Selected Papers – Part 1* 2.3–4 (2005). Ed. by Paul Bourguine, François Képès, and Marc Schoenauer, pp. 163–176. DOI: 10.1159/000093688.

## Conference proceedings

- [1] Wajeb Saab, Mashood Mohiuddin Maaz, Simon Bliudze, and Jean-Yves Le Boudec. “Ordering Events Based on Intentionality in Cyber-Physical Systems”. In: *Proc. of the 9th ACM/IEEE International Conference on Cyber-Physical Systems*. To appear. Apr. 2018.
- [2] Simon Bliudze, Alena Simalatsar, and Alina Zolotukhina. “Constraint-Flow Nets: A Model for Building Constraints from Resource Dependencies”. In: *Proc. of the 19th International Conference on Coordination Models and Languages*. Ed. by Jean-Marie Jacquet and Mieke Massink. Vol. 10319. LNCS. Springer, June 2017, pp. 197–216. DOI: 10.1007/978-3-319-59746-1\_11.
- [3] Hela Guesmi, Belgacem Ben Hedia, Simon Bliudze, Saddek Bensalem, and Briag Le Nabec. “TT-BIP: Using Correct-by-Design BIP Approach for Modelling Real-Time System with Time-Triggered Paradigm”. In: *Proceedings of the 11th International Conference Verification and Evaluation of Computer and Communication Systems (VECoS 2017)*. Vol. 10466. Lecture Notes in Computer Science. Springer, 2017, pp. 171–188. DOI: 10.1007/978-3-319-66176-6\_12.
- [4] Anastasia Mavridou, Valentin Rutz, and Simon Bliudze. “Coordination of Dynamic Software Components with JavaBIP”. In: *Proceedings of the 14th International Conference Formal Aspects of Component Software (FACS 2017)*. Vol. 10487. Lecture Notes in Computer Science. Springer, 2017, pp. 39–57. DOI: 10.1007/978-3-319-68034-7\_3.
- [5] Wajeb Saab, Maaz Mashood Mohiuddin, Simon Bliudze, and Jean-Yves Le Boudec. “Quarts: Quick Agreement for Real-Time Control Systems”. In: *22nd IEEE International Conference on Emerging Technologies and Factory Automation (ETFA)*. Limassol, Cyprus, 2017, pp. 1–8. DOI: 10.1109/ETFA.2017.8247590.
- [6] Eduard Baranov and Simon Bliudze. “A Note on the Expressiveness of BIP”. In: *Proceedings Combined 23rd International Workshop on Expressiveness in Concurrency and 13th Workshop on Structural Operational Semantics, EXPRESS/SOS 2016*. Vol. 222. EPTCS. 2016, pp. 1–14. DOI: 10.4204/EPTCS.222.1.
- [7] Igor V. Konnov, Tomer Kotek, Qiang Wang, Helmut Veith, Simon Bliudze, and Joseph Sifakis. “Parameterized Systems in BIP: Design and Model Checking”. In: *27th International Conference on Concurrency Theory, CONCUR 2016, August 23–26, 2016, Québec City, Canada*. Vol. 59. LIPIcs. 2016, 30:1–30:16. DOI: 10.4230/LIPIcs.CONCUR.2016.30.
- [8] Anastasia Mavridou, Eduard Baranov, Simon Bliudze, and Joseph Sifakis. “Architecture Diagrams: A Graphical Language for Architecture Style Specification”. In: *Proceedings 9th Interaction and Concurrency Experience (ICE)*. Vol. 223. EPTCS. 2016, pp. 83–97. DOI: 10.4204/EPTCS.223.6.
- [9] Anastasia Mavridou, Emmanouela Stachtari, Simon Bliudze, Anton Ivanov, Panagiotis Katsaros, and Joseph Sifakis. “Architecture-based Design: A Satellite On-board Software Case Study”. In: *13th International Conference on Formal Aspects of Component Software (FACS 2016)*. Vol. 10231. Lecture Notes in Computer Science. 2016, pp. 260–279. DOI: 10.1007/978-3-319-57666-4\_16.

- [10] Maaz Mashood Mohiuddin, Wajeb Saab, Simon Bliudze, and Jean-Yves Le Boudec. “Axo: Masking Delay Faults in Real-Time Control Systems”. In: *The 42nd Annual Conference of IEEE Industrial Electronics Society*. 2016, pp. 4933–4940. DOI: 10.1109/IECON.2016.7793512.
- [11] Simon Bliudze, Alessandro Cimatti, Mohamad Jaber, Sergio Mover, Marco Roveri, Wajeb Saab, and Qiang Wang. “Formal verification of infinite-state BIP models”. In: *13th International Symposium on Automated Technology for Verification and Analysis*. Ed. by Bernd Finkbeiner, Geguang Pu, and Lijun Zhang. Vol. 9364. LNCS. Springer International Publishing, Nov. 2015, pp. 326–343. DOI: 10.1007/978-3-319-24953-7\_25.
- [12] Kasper Dokter, Sung-Shik T. Q. Jongmans, Farhad Arbab, and Simon Bliudze. “Relating BIP and Reo”. In: *Proceedings 8th Interaction and Concurrency Experience (ICE 2015)*. Ed. by Sophia Knight, Ivan Lanese, Alberto Lluch-Lafuente, and Hugo Torres Vieira. Vol. 189. EPTCS. 2015, pp. 3–20. DOI: 10.4204/EPTCS.189.3.
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- [16] Joseph Sifakis, Saddek Bensalem, Simon Bliudze, and Marius Bozga. “A Theory Agenda for Component-Based Design”. In: *Software, Services, and Systems - Essays Dedicated to Martin Wirsing on the Occasion of His Retirement from the Chair of Programming and Software Engineering*. Ed. by Rocco De Nicola and Rolf Hennicker. Vol. 8950. Lecture Notes in Computer Science. Springer, 2015, pp. 409–439. DOI: 10.1007/978-3-319-15545-6\_24.
- [17] Qiang Wang and Simon Bliudze. “Verification of Component-Based Systems via Predicate Abstraction and Simultaneous Set Reduction”. In: *Trustworthy Global Computing*. Ed. by Pierre Ganty and Michele Loreti. Vol. 9533. Lecture Notes in Computer Science. Springer International Publishing, 2015, pp. 147–162. ISBN: 978-3-319-28765-2. DOI: 10.1007/978-3-319-28766-9\_10.
- [18] Qiang Wang, Simon Bliudze, Yan Lei, and Xiaoguang Mao. “Automatic Fault Localization for BIP”. In: *1st Symposium on Dependable Software Engineering Theories, Tools and Applications*. Ed. by Xuandong Li, Zhiming Liu, and Wang Yi. Vol. 9409. Lecture Notes in Computer Science. Springer, Oct. 2015, pp. 277–283. DOI: 10.1007/978-3-319-25942-0\_18.
- [19] Paul Attie, Eduard Baranov, Simon Bliudze, Mohamad Jaber, and Joseph Sifakis. “A General Framework for Architecture Composability”. In: *12th International Conference on Software Engineering and Formal Methods (SEFM 2014)*. Ed. by D. Giannakopoulou and G. Salaün. LNCS 8702. Switzerland: Springer International Publishing, 2014, pp. 128–143. DOI: 10.1007/978-3-319-10431-7\_10.
- [20] Simon Bliudze and Sébastien Furic. “An Operational Semantics for Hybrid Systems Involving Behavioral Abstraction”. In: *Proceedings of the 10th International Modelica Conference*. Linköping Electronic Conference Proceedings. Lund, Sweden: Linköping University Electronic Press, Linköpings universitet, 2014, pp. 693–706. ISBN: 978-91-7519-380-9. DOI: 10.3384/ECP14096693.

- [21] Simon Bliudze, Anastasia Mavridou, Radoslaw Szymanek, and Alina Zolotukhina. “Coordination of software components with BIP: Application to OSGi”. In: *Proceedings of the 6th International Workshop on Modeling in Software Engineering*. ACM. 2014, pp. 25–30. DOI: 10.1145/2593770.2593777.
- [22] Simon Bliudze, Joseph Sifakis, Marius Dorel Bozga, and Mohamad Jaber. “Architecture Internalisation in BIP”. In: *Proceedings of the 17th International ACM Sigsoft Symposium on Component-based Software Engineering*. CBSE ’14. Marcq-en-Bareul, France: ACM, 2014, pp. 169–178. ISBN: 978-1-4503-2577-6. DOI: 10.1145/2602458.2602477.
- [23] Eduard Baranov and Simon Bliudze. “Extended Connectors: Structuring Glue Operators in BIP”. In: *ICE 2013*. Vol. 131. EPTCS. 2013, pp. 20–35. DOI: 10.4204/EPTCS.131.3.
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- [28] Simon Bliudze and Joseph Sifakis. “Synthesizing Glue Operators from Glue Constraints for the Construction of Component-Based Systems”. In: *10th International Conference on Software Composition*. Ed. by Sven Apel and Ethan Jackson. Vol. 6708. LNCS. Zurich, Switzerland: Springer, 2011, pp. 51–67. DOI: 10.1007/978-3-642-22045-6\_4.
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- [31] Simon Bliudze and Joseph Sifakis. “Causal Semantics for the Algebra of Connectors (Extended abstract)”. In: *FMCO 2007*. Ed. by Frank de Boer and Marcello Bonsangue. LNCS 5382. See the journal version. Berlin Heidelberg: Springer-Verlag, 2008, pp. 179–199. DOI: 10.1007/978-3-540-92188-2\_8.
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- [33] Simon Bliudze, Nicolas Billy, and Daniel Krob. “On Optimal Hybrid ARQ Control Schemes for HSDPA with 16QAM”. In: *Proc. of IEEE Int. Conf. on Wireless and Mobile Computing, Networking and Communications*. Vol. 1. Aug. 2005, pp. 121–127. DOI: 10.1109/WIMOB.2005.1512826.

- [34] Simon Bliudze and Daniel Krob. “Performance evaluation of demodulation with diversity — A combinatorial approach III: Threshold analysis”. In: *Proc. of the 7th Workshop on Algorithm Engineering and Experiments and the 2nd Workshop on Analytic Algorithmics and Combinatorics*. Ed. by Camil Demetrescu, Robert Sedgewick, and Roberto Tamassia. SIAM. Jan. 2005, pp. 195–205.

## Invited presentations

- [1] Simon Bliudze and Sébastien Furic. “On the Soundness of Behavioural Abstraction in Hybrid Systems”. In: *2nd International Workshop on Simulation at the System Level, Cargese, Corsica., October 19-21, 2014*. Invited talk. Cargese, Corsica., 2014.

## PhD Thesis

- [1] Simon Bliudze. “A Framework for Studying Complex Industrial Systems: An Example Based on the UMTS Infrastructure”. PhD thesis. 91128 Palaiseau cedex, France: École Polytechnique, June 2006.