# STACK publications

This document contains publications relating to the STACK computer aided assessment system.
For more information about STACK please see https://stack.maths.ed.ac.uk/demo
The original BiBTeX entries are available from

`https://github.com/maths/moodle-qtype_stack/tree/master/doc/content/stack.bib`

## Suggestions of where to start


[1] G. Kinnear. Delivering an online course using STACK. In *Contributions to the 1st International STACK conference 2018 in Fürth, Germany*. Zenodo, 2019.

[2] C. J. Sangwin and I. Jones. Asymmetry in student achievement on multiple choice and constructed response items in reversible mathematics processes. *Educational Studies in Mathematics*, 94:205–222, 2017.

[3] C. J. Sangwin. *Computer Aided Assessment of Mathematics*. Oxford University Press, Oxford, UK, 2013.


## Books


[1] C. J. Sangwin. *Computer Aided Assessment of Mathematics*. Oxford University Press, Oxford, UK, 2013.

[2] Y. Nakamura. *The STACK e-Learning and Assessment System for mathematics, science and engineering education through Moodle*. Tokyo Denki University Press, 2010. (In Japanese).


## Specific issues


[1] C. J. Sangwin and P. Ramsden. Linear syntax for communicating elementary mathematics. *Journal of Symbolic Computation*, 42(9):902–934, 2007.

[2] Y. Nakamura and T. Takahara. Development of a math input interface with flick operation for mobile devices. In *12th International Conference on Mobile Learning, 9–11 April, Vilamoura, Algarve, Portugal*, 2016.

[3] C. J. Sangwin and M. Harjula. Online assessment of dimensional numerical answers using STACK in science. *European Journal of Physics*, 2017.

[4] C. J. Sangwin. *Proof Technology in Mathematics Research and Teaching*, chapter Reasoning by equivalence: the potential contribution of an automatic proof checker. Mathematics education in the digital era. Springer International, 2019.

[5] C. J. Sangwin. Inequalities, assessment and computer algebra. *International Journal of Mathematical Education in Science and Technology*, 46(1):76–93, 2015.

**STACK and Examinations**


[1] C. J. Sangwin and N. Köcher. Automation of mathematics examinations. *Computers and Education*, 94:215–227, 2016.

[2] C. J. Sangwin. Developing and evaluating an online linear algebra examination for university mathematics. In *Proceedings of CERME 11*, number TWG 21: Mssessment in Mathematics Education, 2019.

[3] C. J. Sangwin. High stakes automatic assessments: developing an online linear algebra examination. In *Proceedings of 11th Conference on Intelligent Computer Mathematics*, Hagenberg, Austria, 2018.


**Research and conference papers**


[1] T. Pelkola, A. Rasila, and C. J. Sangwin. Investigating Bloom's learning for mastery in mathematics with online assessment. *Informatics in Education*, 2018.

[2] K. Yoshitomi. Generation of abundant multi-choice or STACK type questions using cas for random assignments. In J.H. Davenport, M. Kauers, G. Labahn, and J. Urban, editors, *Proc. Mathematical Software — ICMS 2018*, number 10931 in Springer Lecture Notes in Computer Science, pages 492–497, 2018.

[3] H. Barbas and T. Schramm. The Hamburg online math test MINTFIT for prospective students of STEM degree programmes. In *Proceedings of SEFI, Tampere, Finland*, 2016.

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[5] C. J. Sangwin. Undergraduates' attempts at reasoning by equivalence in elementary algebra. In *Didactics of Mathematics in Higher Education as a Scientific Discipline: Conference Proceedings*, khdm-Report 16-05, pages 335–341, Universität Kassel, Leuphana Universität Lüneburg, Universität Paderborn, 2016.

[6] A. Rasila, J. Malinen, and H. Tiitu. Automatic assement and conceptual understanding. *Teaching Mathematics and its Applications*, 34(3):149–159, 2015.

[7] A. Rasila. E-assessment material bank abacus. In *Proceedings of EDILEARN16, 8th Annual International Conference on Education and New Learning Technologies*, July 2016.

[8] A. Rasila and J. Malinen. MOOCs in first year engineering: Mathematics experiences and future aims. In *Proceedings of 44th SEFI Conference, Tampere, Finland*, September 2016.

[9] S. Shirai and T. Fukui. Improving the math input method for matrices for use in linear algebra on STACK. *IPSJ Transactions on Computers and Education*, 1(3):22–29, March 2015. (In Japanese).

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[12] Y. Nakamura, T. Taniguchi, and T. Takahara. Item bank system for the mathematics e-learning system STACK. *Research Journal of Mathematics and Technology*, 3(2):77–85, December 2014.

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[18] R. Bradford, J. H. Davenport, and C. J. Sangwin. A comparison of equality in computer algebra and correctness in mathematical pedagogy (ii). *The International Journal for Technology in Mathematics Education*, 17(2):93–98, 2010.

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**Theses**

[1] M. Badger. *Problem-solving in undergraduate mathematics and computer aided assessment*. Phd, University of Birmingham, 2013.

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For copies of the proceedings of the first STACK conference see https://zenodo.org/communities/stack

**Proceedings of the first STACK conference, 2018**


[1] J. Härterich. Using randomized quizzes in undergraduate linear algebra and multivariable calculus. In *Contributions to the 1st International STACK conference 2018 in Fürth, Germany*. Zenodo, 2019.

[2] T. Mai and A. Meyer. Sketching functions as a digital task with automated feedback. In *Contributions to the 1st International STACK conference 2018 in Fürth, Germany*. Zenodo, 2019.

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**Legacy Reports**


[1] C. J. Sangwin. Who uses STACK? a report on the use of the STACK CAA system. Technical report, The Maths, Stats and OR Network, School of Mathematics, The University of Birmingham, 2010.

[2] C. .J. Sangwin and D. F. M. Hermans. A report on the use of stack in mathematics at birmingham 2012–2013. *Community for Undergraduate Learning in the Mathematical Sciences*, 8:16–30, December 2013.

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