



Figure 13. Numerical model

## Professor Ulrike Kuhlmann

The three stiffened panel images above are from: Martin Mensinger, Ulrike Kuhlmann, Joseph Ndogmo, Vahid Pourostad and Nadine Maier, "Investigation on stiffened panels subjected to biaxial compression", 9th International Symposium on Steel Bridges, IOP Conference Series: Materials Science and Engineering, Vol. 419, 012038, 2018

See:

<https://www.bbaw.de/die-akademie/bbaw-mitglieder/mitglied-ulrike-kuhlmann>

[https://www.researchgate.net/profile/Ulrike\\_Kuhlmann2/14](https://www.researchgate.net/profile/Ulrike_Kuhlmann2/14)

<https://www.archida.uni-stuttgart.de/scientists/Kuhlmann-00009/>

Civil and Environmental Engineering, Steel, Timber and Composite Structures, Institute of Structural Design, University of Stuttgart, Germany

### Summary:

As a member of numerous expert committees, Ulrike Kuhlmann is actively involved in European Standardisation work for steel, timber and composites. Her research includes subjects of stability, fatigue and all kinds of joints and connections. Her interests include advancing steel, timber and hybrid construction systems with a focus on novel joints as well as building code compliance and code development based on safety level approaches.

### Education:

1986 Dr.-Ing., Ruhr-Universität Bochum, Prof. Dr.-Ing. K. Roik

1981 Dipl.-Ing., Structural Engineering, Ruhr-Universität Bochum

1976 – 1981 Studies in Structural Engineering, Ruhr-Universität Bochum

### Selected Publications:

Kuhlmann, U. (1989). Definition of Flange Slenderness Limits on the Basis of Rotation Capacity Values. *Journal of Constructional Steel Research*. 14(1), 21-40.

Kuhlmann, U. and Seitz, M. (2002). "Behaviour of longitudinally stiffened girder webs subjected to patch loading", *Proceedings of the 3rd European conference on steel structures*, Coimbra, Portugal. 19-20 September. pp. 581-590.

Kuhlmann, U. and Seitz, M. (2004). "Longitudinally Stiffened Girder Webs Subjected to Patch Loading", *Proceedings of the International symposium on steel bridges "Steelbridge 2004"*, Millau, France, 23-25 June.

U. Kuhlmann, B. Braun, M. Feldmann, J. Naumes, P.-O. Martin, Y. Galiaea, B. Johansson, P. Collin, J. Eriksen, H. Degée, N. Hausoul, J. Chica, J. Raoul, L. Davaine, and A. Petel. *Competitive steel and composite bridges by improved steel plated structures (COMBRI) / Report of the RFCS-Project RFS-CR-03018*. Technical report, 2007.

H. Degée, A. Detzel, and U. Kuhlmann, "Interaction of global and local buckling in welded RHS compression

members,” *Journal of Constructional Steel Research*, vol. 64, no. 7-8, pp. 755–765, 2008.

U. Kuhlmann and B. Braun. Untersuchung des Einflusses von Vorbeulen auf die Tragfähigkeit von stahlernen Leichtbau-Hallenkonstruktionen - Längs- und Schubspannungen -. Technical report, Institut für Konstruktion und Entwurf, Stuttgart, 2008.

G. Sedlacek, M. Feldmann, U. Kuhlmann, M. Mensinger, J. Naumes, C. Müller, B. Braun, and J. Ndogmo. Entwicklung und Aufbereitung wirtschaftlicher Bemessungsregeln für Stahl- und Verbundträger mit schlanken Stegblechen im Hoch- und Brückenbau. Technical report, DAST-Forschungsbericht, AiF-Projekt-Nr. 14 771, 2008.

B. Braun and U. Kuhlmann. Bemessung und Konstruktion von aus Blechen zusammengesetzten Bauteilen nach DIN EN 1993-1-5. In U. Kuhlmann, editor, *Stahlbau-Kalender 2009*, pages 381–453. Ernst & Sohn GmbH & Co. KG, 2009.

Beg, D., Kuhlmann, U., Davaine, L., Braun, B., Design of Plated Structures. Eurocode 3: Design of Steel Structures. Part 1–5: Design of Plated Structures, First edition, European Convention for Constructional Steelwork, Berlin, Ernst & Sohn, Brussels, 2010

U. Kuhlmann, A. Zizza, B. Braun, H. Degée, New chances and developments of Eurocode 3 Part 1.5 - bridge design aspects, *Steel Constr*, 4 (2011), pp. 224-231, [10.1002/stco.201110030](https://doi.org/10.1002/stco.201110030)

U. Kuhlmann and A. Zizza. Stahlbaunormen, DIN EN 1993-1-5: Bemessung und Konstruktion von Stahlbauten - Plattenförmige Bauteile. In U. Kuhlmann, editor, *Stahlbau-Kalender 2012*, pages 79–134. Ernst & Sohn GmbH & Co. KG, 2012.

Kuhlmann, U., Beg, D., Zizza, A., Sinur, F., Rejec, K., Tragverhalten von Blechen mit Längssteifen unter Interaktion von Biegemoment und Querkraft (in German), Research Report, Universität, Institut für Konstruktion und Entwurf, Stuttgart, 2012.

L. Pavlovčić, B. Froschmeier, U. Kuhlmann, D. Beg, Finite element simulation of slender thin-walled box columns by implementing real initial conditions, *Adv. Eng. Softw.*, 44 (2012), pp. 63–74

U. Kuhlmann, D. Beg, A. Zizza, and F. Sinur. Beulverhalten längsausgesteifter Platten unter Interaktion von Biegung und Querkraft. *Stahlbau*, 81(11):820–827, nov 2012.

F. Sinur, A. Zizza, U. Kuhlmann, and D. Beg. Buckling interaction of slender plates - Experimental and numerical investigations. *Thin-Walled Structures*, 61:121–131, dec 2012.

B. Kövesdi, L. Dunai, U. Kuhlmann, “Interacting stability behavior of steel I-girders with corrugated webs”, *Thin-Walled Structures*, Vol. 61, pp 132-144, DOI: [10.1016/j.tws.2012.05.005](https://doi.org/10.1016/j.tws.2012.05.005)

U. Kuhlmann, D. Beg, A. Zizza, F. Sinur, and K. Rejec. Bending-shear interaction of longitudinally stiffened steel plates. Report on the DFG-Project KU 1130/14-1. Technical report, 2013.

U. Kuhlmann, A. Zizza, and V. Pourostad. Beulen mehrachsiger beanspruchter Platten. Technical report, DAST-AiF Project-No. 18 213, in progress.

U. Kuhlmann, A. Zizza, and V. Pourostad. Optimal Use of High Strength Steel Grades Within Bridges (OPTIBRI). Technical report, Project-Partners: University of Liège (Coordinator), University of Stuttgart, University of Coimbra, Belgian Welding Institute, GRID Consulting Engineers and Industeel, Work Package 3 of the RFCS Project-No. RFSR-CT-2014-00026, in progress.

A. Zizza and U. Kuhlmann. Tensile Stresses on the Buckling Behaviour of Slender Plates. In *IABSE Young Engineers Colloquium*, pages 10–11, Dresden, 2014.

B. Koevesdi, J. Alcaine, L. Dunai, E. Mirambell, B. Braun and U. Kuhlmann, “Interaction behaviour of steel I-girders Part I: Longitudinally unstiffened girders”, *Journal of Constructional Steel Research*, Vol. 103, pp 327-343, December 2014

B. Koevesdi, J. Alcaine, L. Dunai, E. Mirambell, B. Braun and U. Kuhlmann, “Interaction behaviour of steel I-girders Part II: Longitudinally stiffened girders”, *Journal of Constructional Steel Research*, Vol. 103, pp 344-353, December 2014

V. Pourostad, A. Zizza, U. Kuhlmann, Investigations on the buckling behaviour of slender high strength steel plates under multiaxial stresses, *Proc. Eurosteel 2017*, Copenhagen, Denmark (2017), [10.1002/cepa.128](https://doi.org/10.1002/cepa.128)

Martin Mensinger, Ulrike Kuhlmann, Joseph Ndogmo, Vahid Pourostad and Nadine Maier, “Investigation on stiffened panels subjected to biaxial compression”, 9th International Symposium on Steel Bridges, IOP Conference Series: Materials Science and Engineering, Vol. 419, 012038, 2018

L. Schaper, R. Winkler, F. Jörg, U. Kuhlmann, M. Knobloch, Experimental study on LTB behaviour and residual stresses of welded I-section members, F. Wald, M. Jandera (Eds.), Proceedings of the International Colloquia on Stability and Ductility of Steel Structures (SDSS 2019), September 11-13, 2019, CRC Press/Balkema, Prague, Czech Republic (2019), pp. 972-980

Markus Knobloch, Alain Bureau, Ulrike Kuhlmann, Luis Simoes da Silva, Hubertus H. Snijder, Andreas Taras, Anna-Lena Bours and Fabian Jorg, "Structural member stability verification in the new Part 1-1 of the second generation of Eurocode 3", Verlag für Architektur und technische Wissenschaften GmbH & Co. KG, Berlin. Steel Construction 13 (2020)