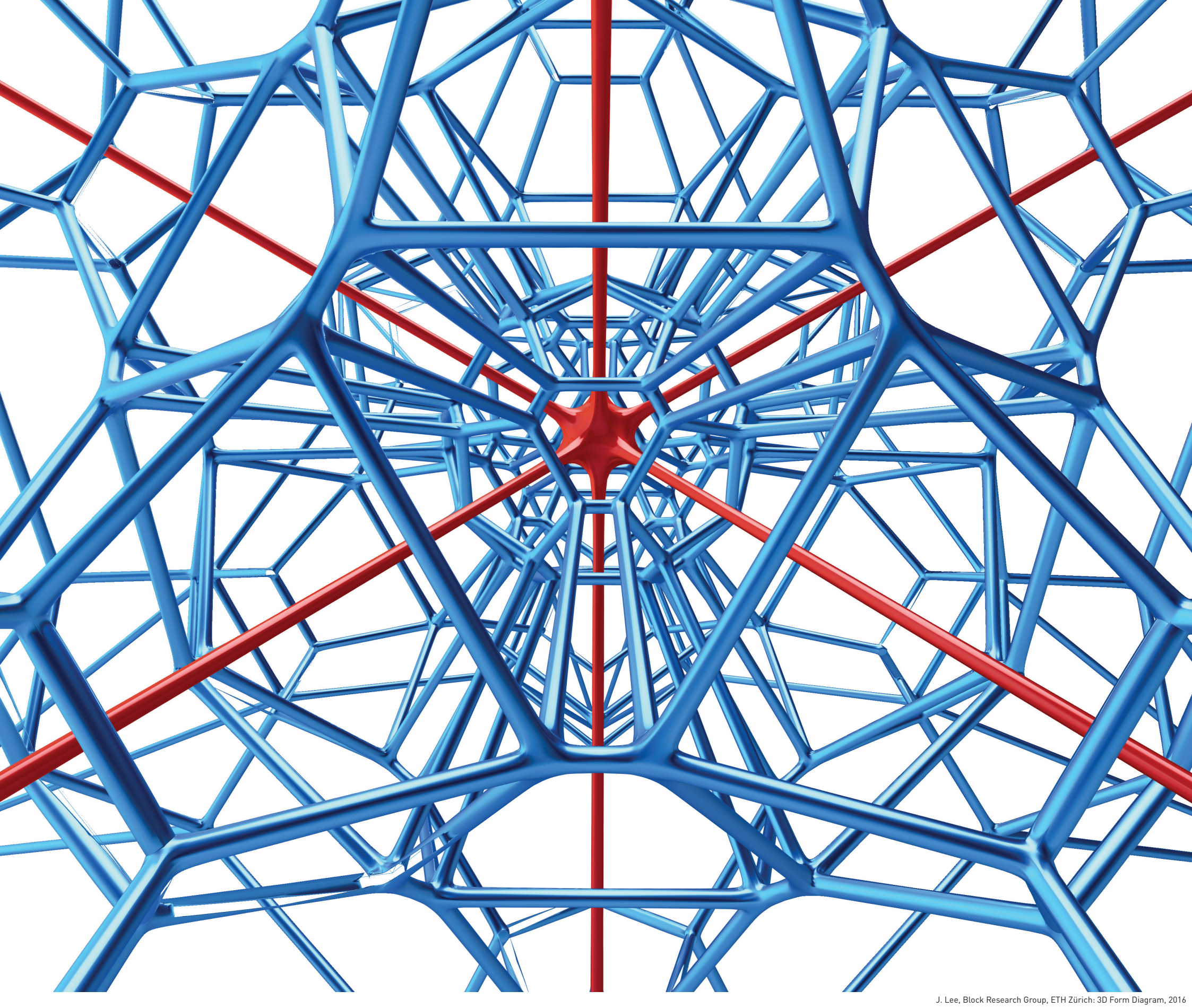

J. Lee, Block Research Group, ETH Zürich: 3D Form Diagram, 2016

3D Graphic Statics
PAST, PRESENT, FUTURE

One of the most peculiar features of 2D graphic statics is the geometric reciprocity between form and force diagrams. Thanks to this property, it is possible to manipulate the form of a given loaded structure and directly evaluate the consequences on the distribution of the inner forces within the structure. Conversely, it is possible to modify the magnitude and direction of the inner forces while assessing the transformation of the form. Extending graphic statics to the third dimension would allow new possibilities for both structural design and analysis in three dimensions. There are different ways to embark on this topic, such as the vector-based and the polyhedral-based approaches.

The goal of this special work-session is to highlight the most recent findings in the field of 3D graphic statics and to identify the key questions that have to be addressed by future research on the matter at issue. By promoting constructive discussion and exchanging on shared issues, the aim is to generate a big boost to the topic of 3D graphic statics. The event will also represent a great opportunity to open new doors for future collaboration.

smart living lab, Fribourg (Switzerland) - 06.02.2017

9:00-9:10	Introduction C. Fivet (EPFL, CH)
9:10-9:40	Rankine 3D and differences between Maxwell and Cremona M. Konstantatou (Cambridge, UK)
9:40-10:10	Maxwell-Rankine 3D reciprocal diagrams J. Lee (ETHZ, CH)
10:20-10:50	Cremona's approach to 3D diagrams P. D'Acunto (ETHZ, CH) and J. P. Jasienski (UCLouvain, BE)
10:50-11:20	3D Michell trusses B. Jacot (MIT, USA)
11:30-12:00	Identification of the key questions to address in the afternoon
13:30-13:50	Summary of the morning session
13:50-16:40	Group discussion on identified questions
16:50-17:20	Conclusion

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