



Project proposals

**CFD/DEM with StarCCM+
Innovation Center Randers
AGCO**

Randers Introduction

Facilities

- 13.000 m2 indoor workshop and lab facilities
- Approx. 70 internal/external employees
- Unique facility, culture and practices applied as the foundation for innovation across four concurrently operating engineering functions
- Customer centric development of system solutions (mechanical and software)
- Innovation driven by culture and best practices instead of processes

Indoor sensor test track



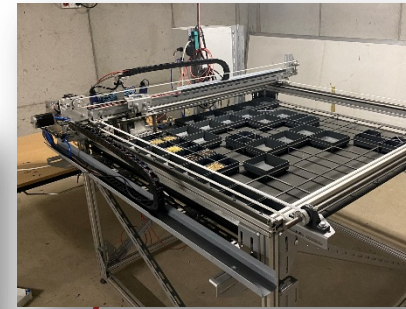
Full-scale functional lab



Reliability test lab



Electronic and SW lab



Sub-system functional lab



Test track & Field plots

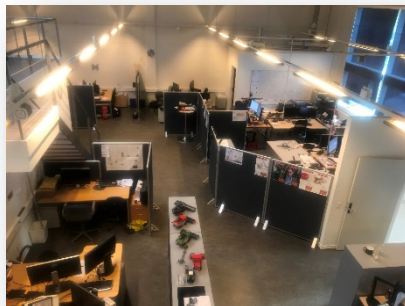


Watch this video of how we work!

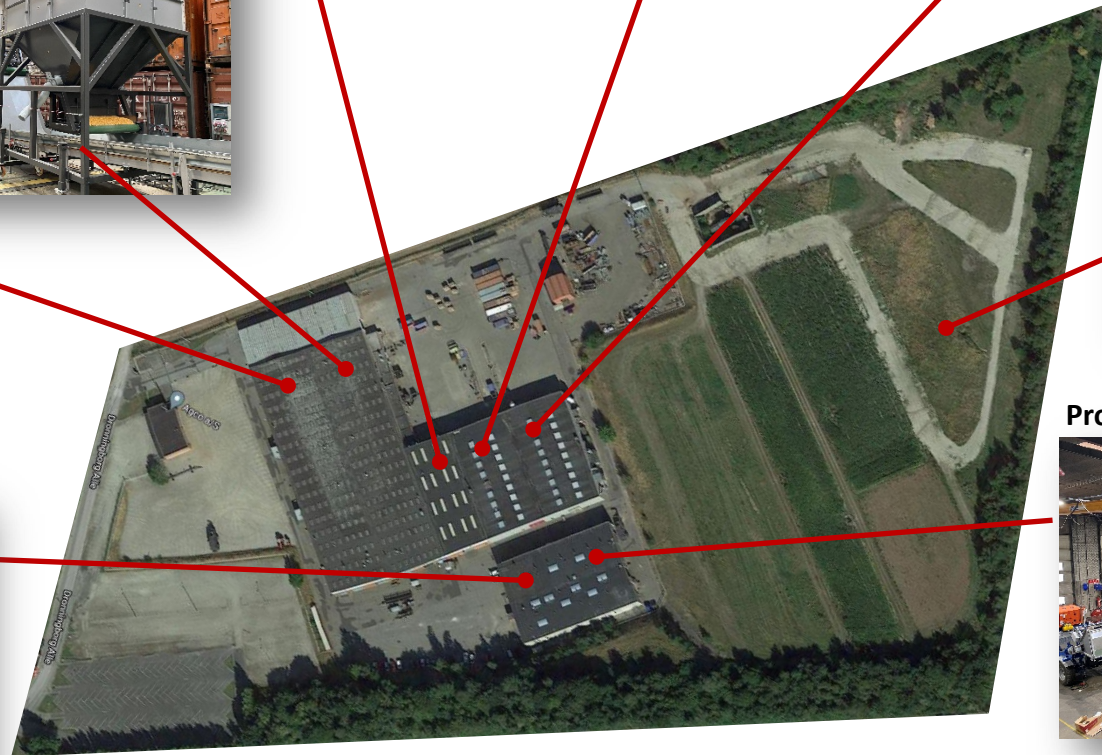
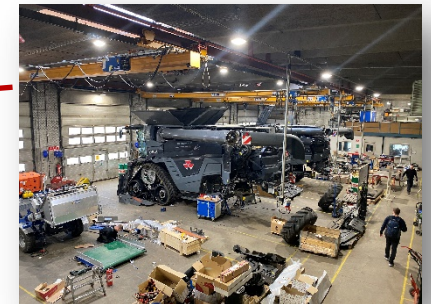


<https://www.youtube.com/watch?v=uVA1ubjDKXw>

Current office

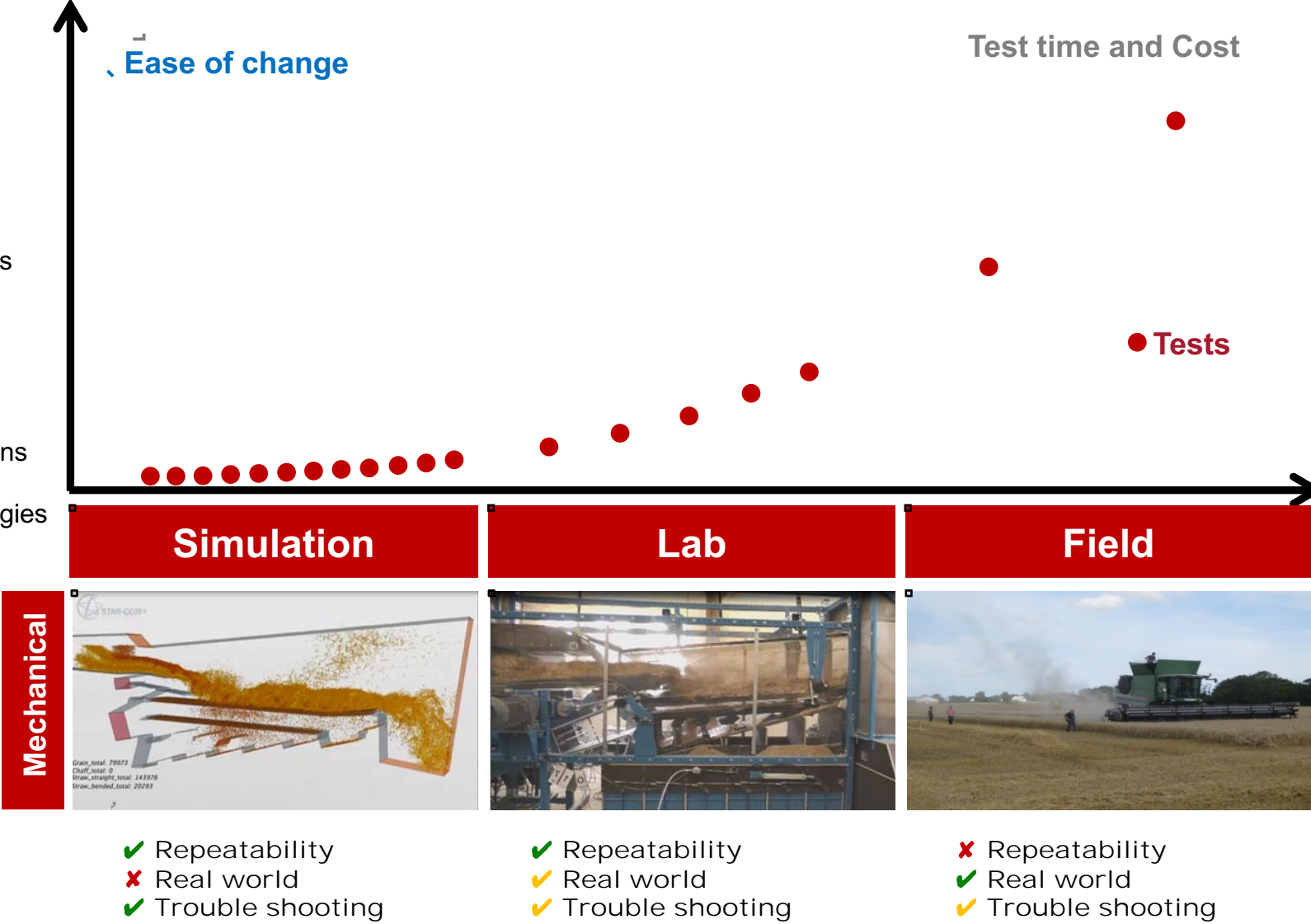


Prototype workshop



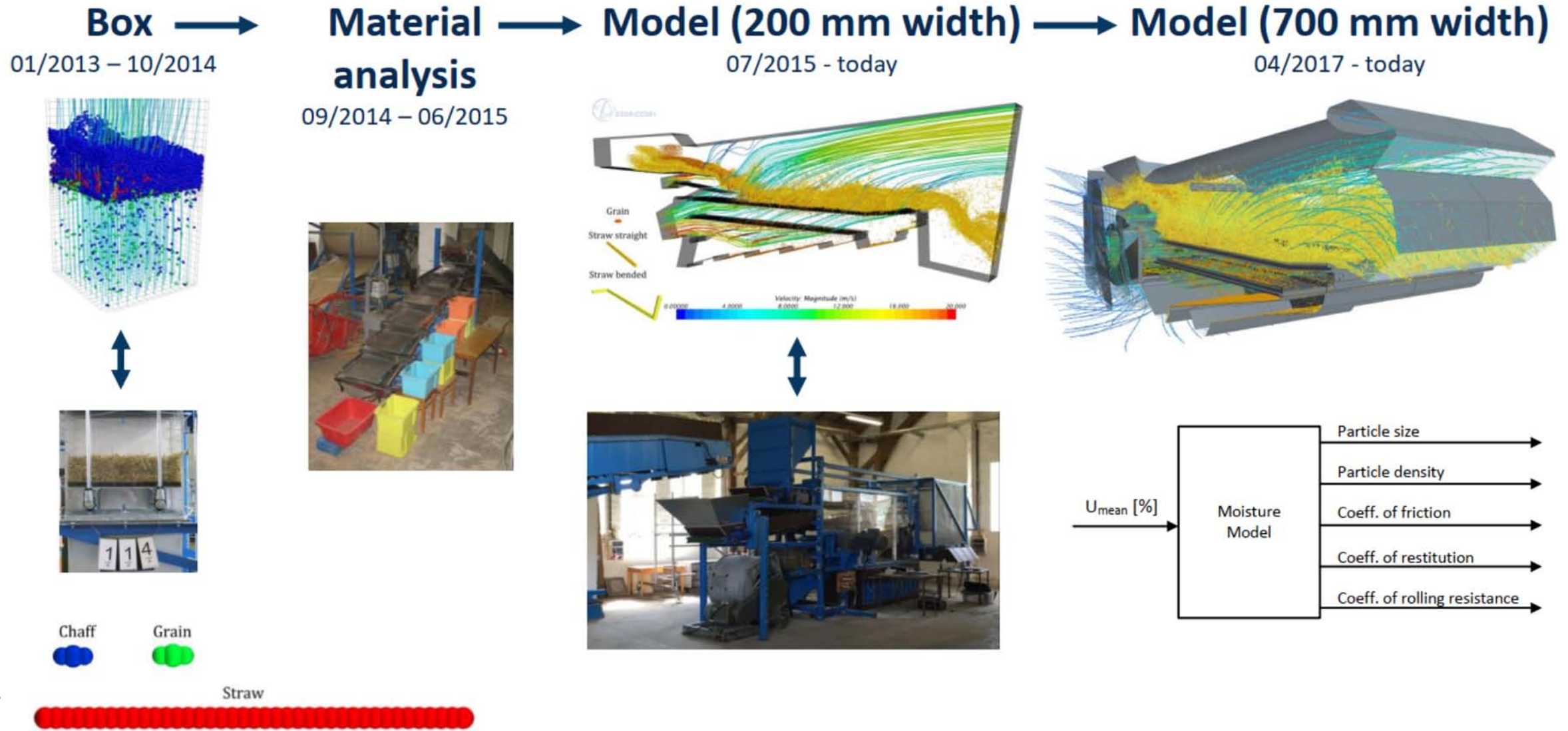
Development of Agriculture Products
Methodology

- Enhanced use of laboratory and virtual development
- Concurrent development of mechanical and software solutions
- Design space exploration across agriculture ecosystem
- Agile development approach
- Iterative development sprints for adaptive product specifications
- Incremental NPI integration of implementation ready technologies



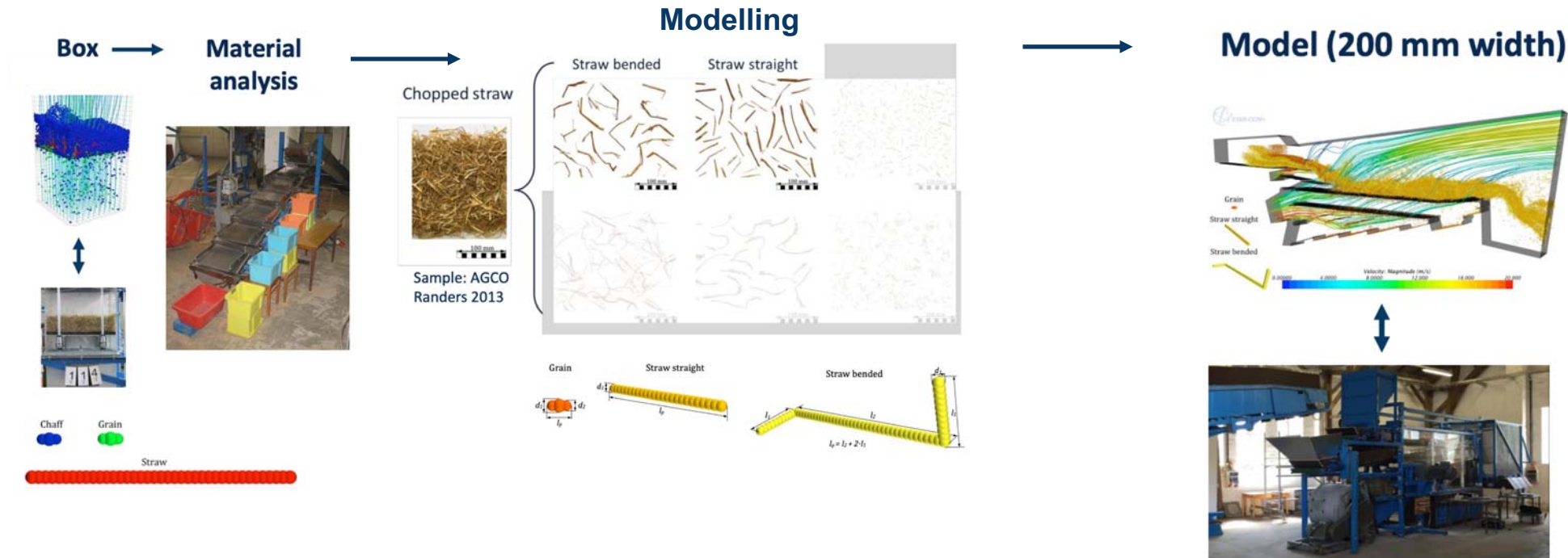
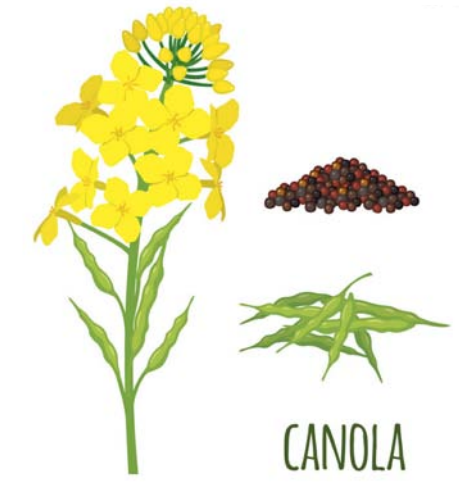
Current development

- AGCO Randers have build the competences and models over the last +10 years
- The objective is to enable and leverage of simulations tools for crop flow and crop processing systems
- Continues development of additional processes, additional crops



Project proposal 1

- Canola particle design and test (experimentally and numerically)
 - Literature analysis
 - Classification of canola MOG (Material other than grain)
 - Measurement of selected properties (length, width, mass, portion in mixture)
 - Small scale experimental tests of separation (using batch system and t_{80} -time) – sensitivity study
 - Numerical modelling and Tests of DEM particles
 - Test runs for robustness and speedup
- The studies would also be supported by TU Dresden, since they have been involved in the development over the last 10 years.



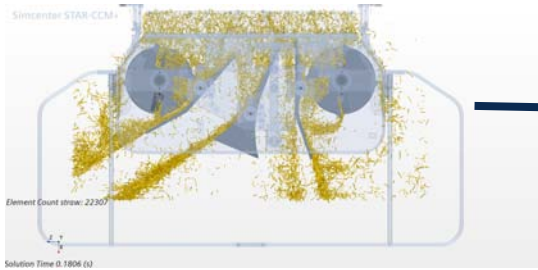
Project proposal 2

- Initial mover simulations (experimentally and numerically)
 - Literature analysis
 - Classification of Grass Particles
 - Measurement of selected properties (length, width, mass, portion in mixture)
 - Small scale experimental tests of separation (using batch system and t_{80} -time) – sensitivity study
 - Numerical modelling and Tests of DEM particles
 - Test runs for robustness and speedup
- The studies would also be supported by TU Dresden, since they have been involved in the development over the last 10 years.

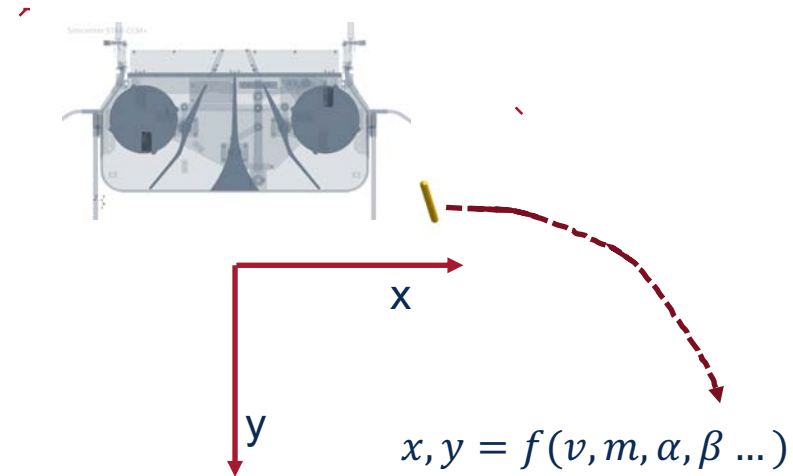


Project proposal 3

- Tailboard simulations and prediction (experimentally and numerically)
 - Improve current models to run more efficient
 - Estimation of path behind tailboard to increase computation
 - Test runs for robustness and speedup
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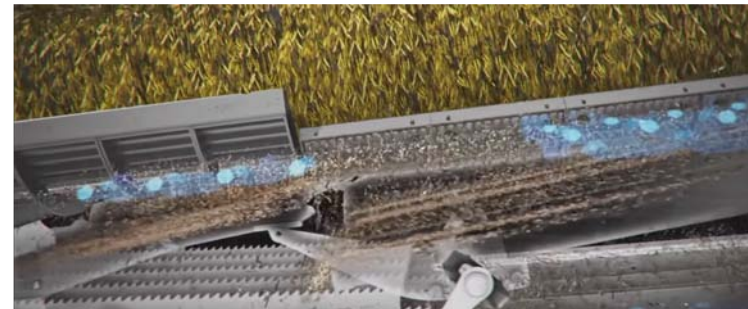
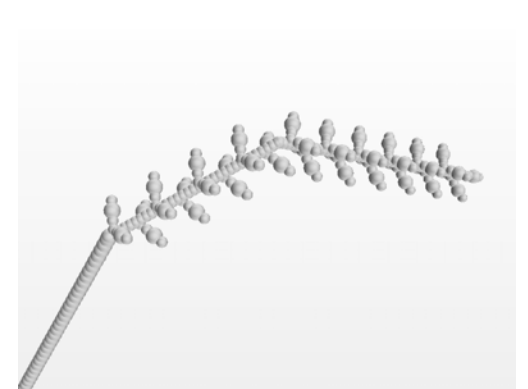
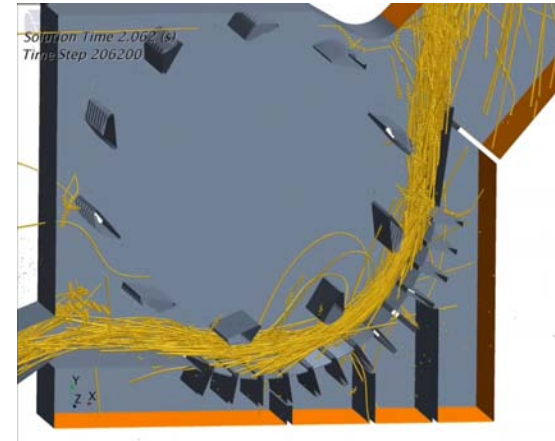


As is



Project proposal 4

- Initial threshing simulations (experimentally and numerically)
 - Literature analysis
 - Classification of wheat shock particles
 - Measurement of selected properties (length, width, mass, portion in mixture)
 - Small scale experimental tests of separation (using batch system and t_{80} -time) – sensitivity study
 - Numerical modelling and Tests of DEM particles
 - Test runs for robustness and speedup
- The studies would also be supported by TU Dresden, since they have been involved in the development over the last 10 years.



Thank You

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