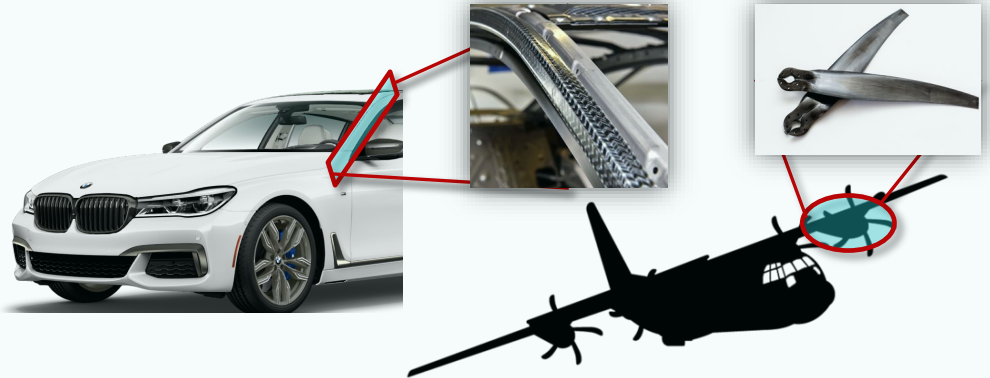


## Experimental and numerical investigation of the friction coefficient at yarn level

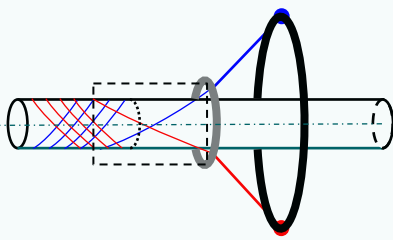
### Over-braiding Process



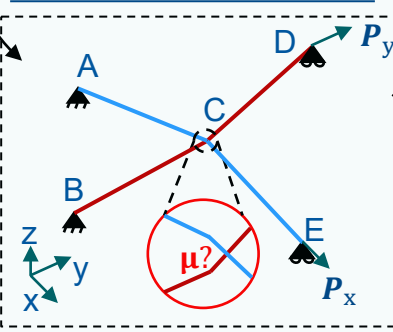
[BMW AG]

[Collins Aerospace]

### Simulation model of the over-braiding process



### Single contact model



### Over-braiding Process

- Over-braiding is known as a suitable manufacturing process of the pre-forms for Resin Transfer Molding.
- Over-braiding simulation are useful to predict the fibre distribution.
- Any model requires input data, in the simplest case here, a coefficient of friction  $\mu$  between yarns.

### Aim

- To study the frictional behavior of fibre/fibre interaction.

### Tasks

- Building an experimental setup using image-based analysis.
- Performing experiments to determine the friction coefficients.
- Improving the accuracy of current yarn interaction model based on experimental finding.
- Validation of the model against experiments.



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