



## Team DSM R&D material model design

### Background:

Professional cycling nowadays is dominated with the search for marginal gains: every detail in preparation and execution of a race is explored and optimized. Every stage or race is unique, and each race asks for specific material choices for the best performance. Team DSM is one of the most scientifically driven teams in the pro-peloton and always aiming for improvement to have an advantage over our competitors. Currently, material choices are made based on experience of experts. Ideally all parameters (race and rider characteristics) are considered to have the best possible preparation to boost the performance of our riders in all circumstances.

### Internship assignment:

The research that is conducted within the R&D department is mainly material based: from the bike – and all its components, to helmets, clothing, etc. It is the aim to make everything as safe and as fast as possible for each specific race. The objective of the internship project is to assist Team DSM's R&D expert in research projects, take the lead in and be responsible for multiple R&D related projects.

### Thesis assignment:

Next to assisting the R&D expert the main assignment will be to write a model that can automatically decide which materials will be optimal for a given race. Input will be the rider parameters and the race details (course, weather, road surface, etc.).

Output will be advice for materials:

- Gearing
- Tire choice
- Wheel choice
- Etc.

You will work closely together with the experts of Team DSM to design the preview model. First a literature study will be performed to structure all relevant requirements for the model and the relations between material and races. Your assignment will be to automatically use all the inputs from the course and create an output file that directly can be used in preparation towards the race. With the designed model the Team will have a more in depth, detailed and optimal preparation for each race.

Both internship and thesis assignments can be performed simultaneously. For more information please contact Jason Moore.

