VERI (Who we are)
Veolia Research and Innovation (VERI) is Veolia corporate research entity with projects in the water, waste and energy domains. Thinking that smart ideas can have their part in climate change mitigation and resource preservation for this planet, we provide innovative solutions to these key challenges.

At VERI, the Modelling & Information Technologies Department is a nodal centre when it comes to renewing our business with smart and digital initiatives. Acting as a catalyst in constant connection with our business units, the department put its mission on the fast delivery of high value and user-oriented services. Spectrum for interventions ranges from bringing performance jumps to our core processes for water or waste treatment, enabling operation excellence by better planning or decisions, fostering new digital services to extend our traditional activities and business models.

The context (What you will contribute to)
As an intern in the Modelling and Simulation Lab, you will contribute to ongoing project dedicated to the development of hybrid models. The project aims to complement physical models with machine learning strategies in order to incorporate self-correcting feedback mechanisms. Through the project, close collaboration with internal and technical experts is expected.

The Job (What you will do)
As part of your internship, you will:
- Prepare a state of the art analysis once a practical problem is identified. The state of the art analysis includes a literature analysis (i.e. review of the published research results) and a best practice analysis (i.e. review of the current industrial practice)
- implement the modelling and simulation tools as well as the workflows for data preparation, simulations, results analysis, and reporting.
- demonstrate for a given test case (simplified test case inspired from ongoing project or directly applied to an ongoing project). It is important to show how the research solution contributes to solve the practical problem.
- help to write specification for the integration of hybrid models in an automated workflow.
**Expected Profile (Who we are looking for)**

We are looking for people who are smart and determined, and we favor ability over experience

**Competencies**

You are Master student from university or engineering school. You have a strong background in one the following: applied mathematics, machine learning, simulation, operational research and you think that simulations and models are key tools in our day to day job. Exploring options and finding innovative answers motivate you.

Capabilities to be efficient in some programming or scripting languages and willing to develop new skills are required. Previous experience in relevant field such as computational science, machine learning, modelling and simulation is expected.

You have a clear and efficient communication style, orally as well as writing technical reports. Fluency in English is required (writing technical reports and participation in technical or business meetings in an international context).

**Attitude**

You have fun thinking the world in concepts and using equations and simulations to test ideas and solve concrete problems. You are curious and willing to learn when it comes to discovering new methods or new application fields. You are not shy to try. Your open mind will make it easy for you to integrate smoothly and contribute efficiently to multidisciplinary project teams. You are self-driven and team player as you think that great ideas comes where personal intuition meets group emulation.

Does it sound familiar to you?
These are very good news: we are looking for someone like you.

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**INTITULE DU POSTE :** Intern hybrid models  
**SITE :** Maisons-Laffitte  
**Période :** 2017  
**Durée :** 6 mois  
**Stage rémunéré**  
**Contact :** yannick.deleuze@veolia.com; ref 2017_HM ; cv et lettre de motivation