Experimental study of NO + H reactivity and the importance of the chemical layer for NH$_2$OH formation

**A. SOW, E. Congiu, H. Chaabouni, S. Baouche and F. Dulieu**

**CONTEXT**
The objective of this poster is not only to know the thickness of NO that reacts with hydrogen atoms but also the time necessary for a complete consumption of NO by exposure to hydrogen atoms.

**In the Laboratory: set-up and methods**
Let R1 and R2 respectively be the chemical reaction ratios. Defined by:
- R1 = [NO]/[H] which gives the corresponding reaction to [NO] + [H] (R1 = 1/3)
- R2 = [NO]/[H] which gives the corresponding reaction to [NO] + [H] (R2 = 1)  
It is found that the ratio R1 is smaller than ratio R2. One notices in the second reaction, it suffices just two atoms of hydrogen to completely destroy NO.

**TPD/FT-RAIRS Results & Reaction Pathways**

**Conclusion**
- NO is only reacting on a thin layer of about one to two layers that we define as CHEMICAL LAYER.
- The reaction depends on the thickness of NO because two different reactions exist.
- Need to do simulation to go further.
- Currently I am building a model of differential equations and looking if we can reproduce the kinetics of the chemistry.

**References**