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TOWARDS A REDUCTION OF TITAN IONOSPHERIC CHEMISTRY MODEL

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Chemical models of Titan's ionosphere are presently involving hundreds of reactions, and the mass spectra obtained by INMS Cassini's measurements indicate that they are far to be sufficient to explain molecular growth [1]. It is thus unavoidable that the complexity of the models will increase, while there is a strong demand for reduced chemistry to include in 2D or 3D atmospheric models.

We focussed on the reaction database used to describe the bimolecular reactivity in Titan ionosphere. We identified, among the 700 reactions presently included in our model, a small subset which is necessary to reproduce the INMS ion mass spectra at different altitudes.

References

[1] Carrasco N, Banaszkiewicz M, Thissen R, Dutuit O, Pernot P. (2007) Uncertainty analysis of bimolecular reactions in Titan ionosphere chemistry model. *Planetary and Space Science*. **55**(1-2), 141-157.