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Séminaire :

**“Intramolecular hydrogen bonds vs. other weak interactions.
The resonance assisted phenomenon.”**

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Résumé :

For β -chalcogenvinylaldehydes, $\text{HC}(=\text{X})\text{-CH}=\text{CH-CYH}$ ($\text{X} = \text{O}, \text{S}, \text{Se}, \text{Te}$; $\text{Y} = \text{O}, \text{S}, \text{Se}, \text{Te}$), among which malonaldehyde is a paradigmatic example, the $\text{X-H}\cdots\text{Y}$ intramolecular hydrogen bond (IHB) competes in strength with the $\text{X}\cdots\text{YH}$ chalcogen-chalcogen interaction. The origin and the importance of these weak interactions on the reactivity of the systems will be discussed. A comparison of these unsaturated compounds with their saturated analogs seems to point out to the existence of a resonance assisted hydrogen bond (RAHB), which enhances the stability of the former. However, a more detailed analysis shows that neither the magnetic nor the electronic properties of the systems provide any evidence for the existence of the RAHB phenomenon.