1172-43-155 **Jean Carlo Moraes*** (jean.moraes@ufrgs.br). *Revisiting Haar Multipliers.*
Let $\mathcal{D} = \{(k2^{-j}, (k+1)2^{-j}] : k, j \in \mathbb{Z}\}$ be the collection of dyadic intervals and h_I the Haar function associated to a dyadic interval I. For $t \in \mathcal{R}$ and a function w, we define a non contant Haar Multiplier, or just *Haar Multiplier*, as

$$T_w^t f(x) = \sum_{I \in \mathcal{D}} \left(\frac{w(x)}{m_I w} \right)^t \langle f, h_I \rangle h_I(x),$$

These operators are formally similar to pseudo-differential operators, since the symbol, $w_I(x) = \left(\frac{w(x)}{m_I w} \right)^t$, depends on variables x and $I \in \mathcal{D}$ (similar in the sense that we replaced the trigonometric functions by Haar functions). For special values of t, T_w^t appeared in connection:

- with the existence and boundedness of the *dyadic paraproduct*, for $t = 1$ in the work of Pereyra;
- with matrix valued weighted inequalities for the Hilbert transform, for $t = \pm\frac{1}{2}$ in the work of Treil and Volberg, .

In this talk we survey the history of these operators, presenting the results on the boundedness of T_w^t on L^p and also how the operator norm depends on w. (Received August 24, 2021)