

## Yet another F-space sample

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In this talk we will explore a new growth condition on Young functions, which we call Mulholland condition, pertaining to the mathematician H. P. Mulholland, who studied these functions for the first time, albeit in a different context. We construct a non-trivial Young function  $\Omega$  which satisfies Mulholland condition and  $\Delta_2$ -condition. We then associate exotic  $F$ -norms to the vector space  $X_1 \oplus X_2$ , where  $X_1$  and  $X_2$  are Banach spaces, using the function  $\Omega$ . This  $F$ -space contains the Banach space  $X_1$  and  $X_2$  as maximal Banach subspace. Further, the Banach envelope  $(X_1 \oplus X_2, \|\cdot\|_{\Omega_o})$  of this  $F$ -space corresponds to the Young function  $\Omega_o$  whose characteristic function is an asymptotic line to the characteristic function of the Young function  $\Omega$ . Thus this  $F$ -space serves as the interpolation space for Banach spaces  $X_1$  and  $(X_1 \oplus X_2, \|\cdot\|_{\Omega_o})$ .