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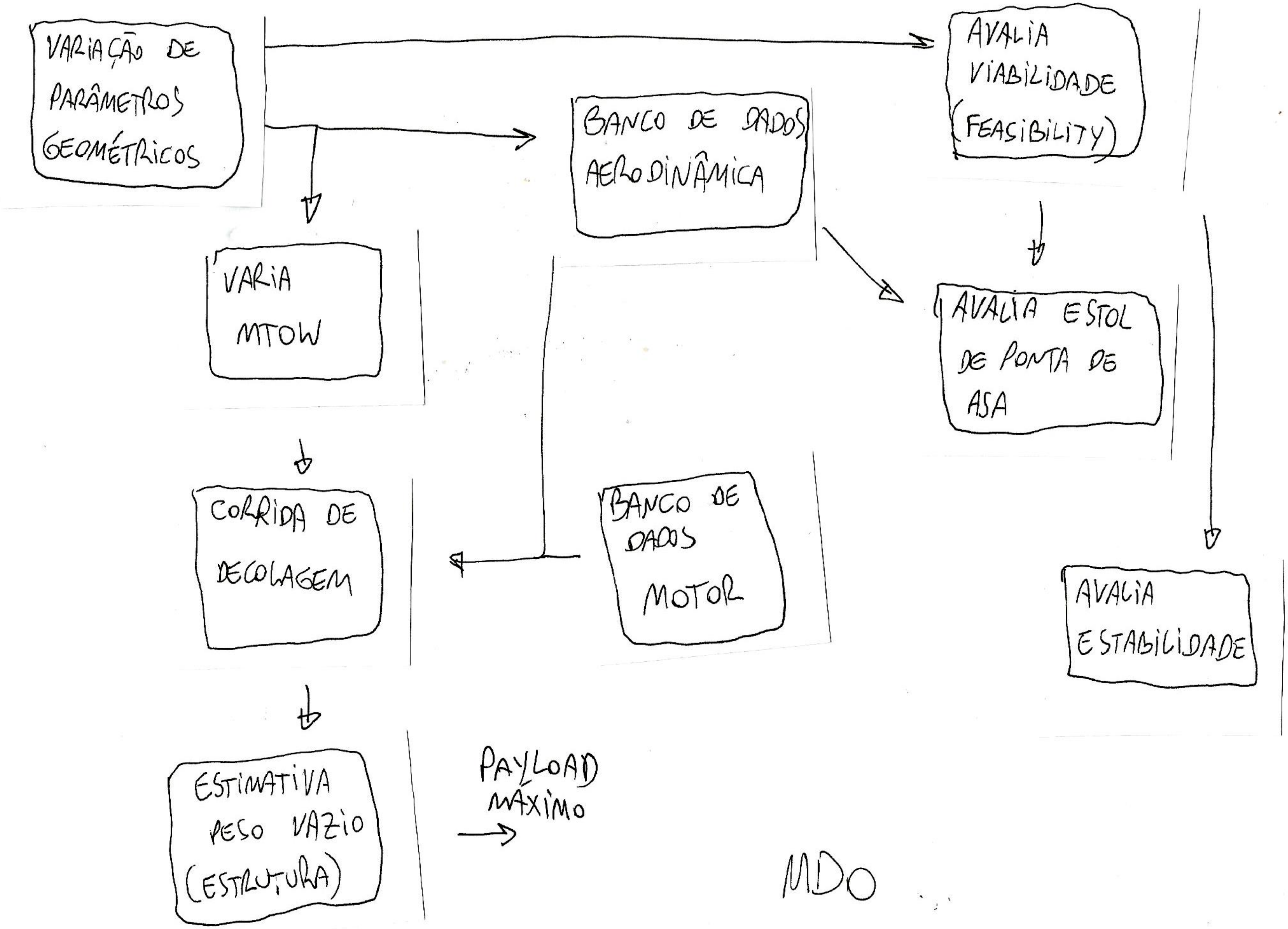
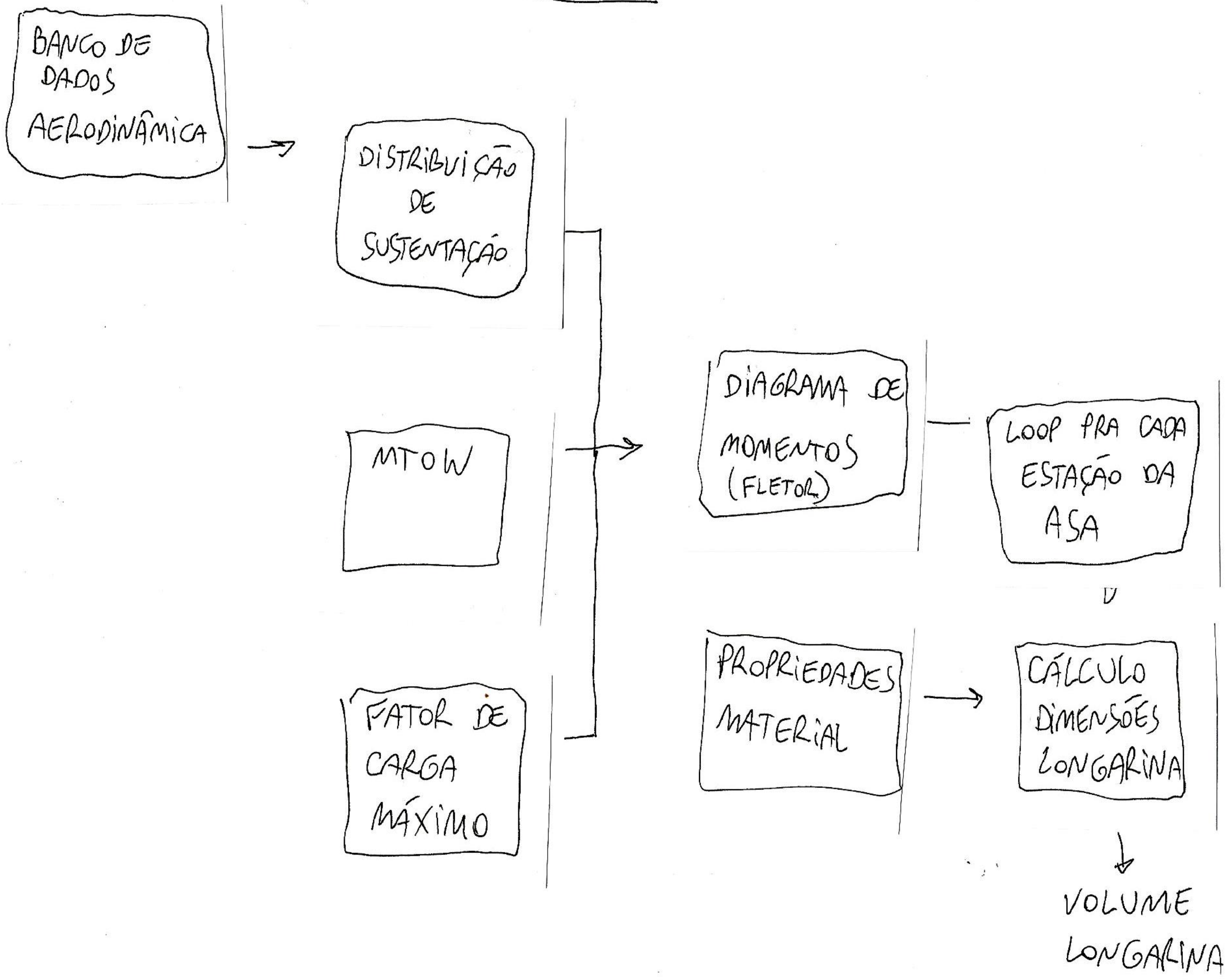

VARIAÇÃO DE PARÂMETROS GEOMÉTRICOS
BANCO DE DADOS AERODINÂMICA
AVALIA VIABILIDADE (FEASIBILITY)
VARIA MTOW
AVALIA ESTOL DE PONTA DE ASA
CORRIDA DE DECOLAGEM
BANCO DE DADOS MOTOR
AVALIA ESTABILIDADE
ESTIMATIVA PESO VAZIO (ESTRUTURA)
PAYLOAD MÁXIMO
MDO

LONGARINA


BANCO DE DADOS AERODINÂMICA
DISTRIBUIÇÃO DE SUSTENTAÇÃO
MTOW
FATOR DE CARGA MÁXIMO
DIAGRAMA DE MOMENTOS (FLETOR)
LOOP PRA CADA ESTAÇÃO DA ASA
PROPRIEDADES MATERIAL
CÁLCULO DIMENSÕES LONGARINA
VOLUME LONGARINA

1cm

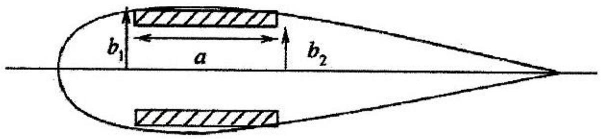
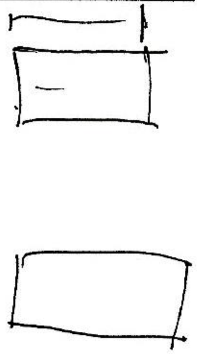


FIGURE 2.11 – Simplified Section Inertia Estimation.



$$\sigma_{MAX} = \frac{M \, . \, y_{MAX}}{I}$$

$$I_{min} = \frac{M.b_1}{\sigma_{max}} \tag{2.9}$$

$$I = \frac{2}{3}a(b_1^3 - b_2^3) \tag{2.10}$$

Then, because we know b_1 of each section, and assuming the variable a (flange width) as a constant fraction of local chord, the only variable left to know is b_2, given by Eq. **2.11**. From this equation we know the flange thickness at every station along span given the chord, profile thickness and required inertia.

$$b_2 = (b_1^3 - \frac{3}{2}I)^{\frac{1}{3}} \tag{2.11}$$