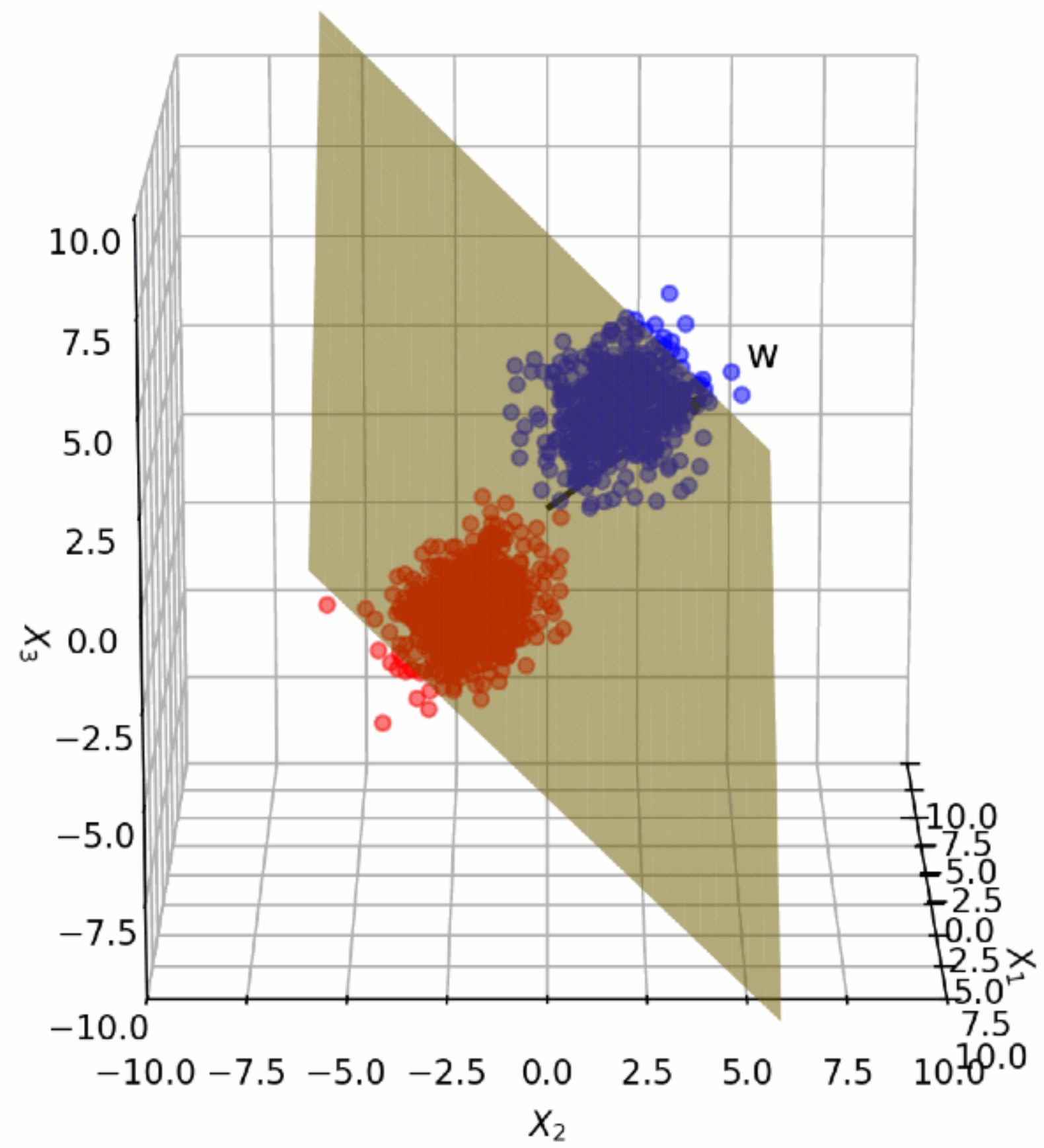




I N S E A









Et si on utilise trois variables:

$$g(\mathbf{x}) \equiv \alpha + \beta_1 \mathbf{x}^1 + \beta_2 \mathbf{x}^2 + \beta_3 \mathbf{x}^3$$

$$g(\mathbf{x}) = a + \beta^{\top} \mathbf{x}$$

Queue formation les \mathbf{x} tels que $\{g(\mathbf{x}) = 0\}$?

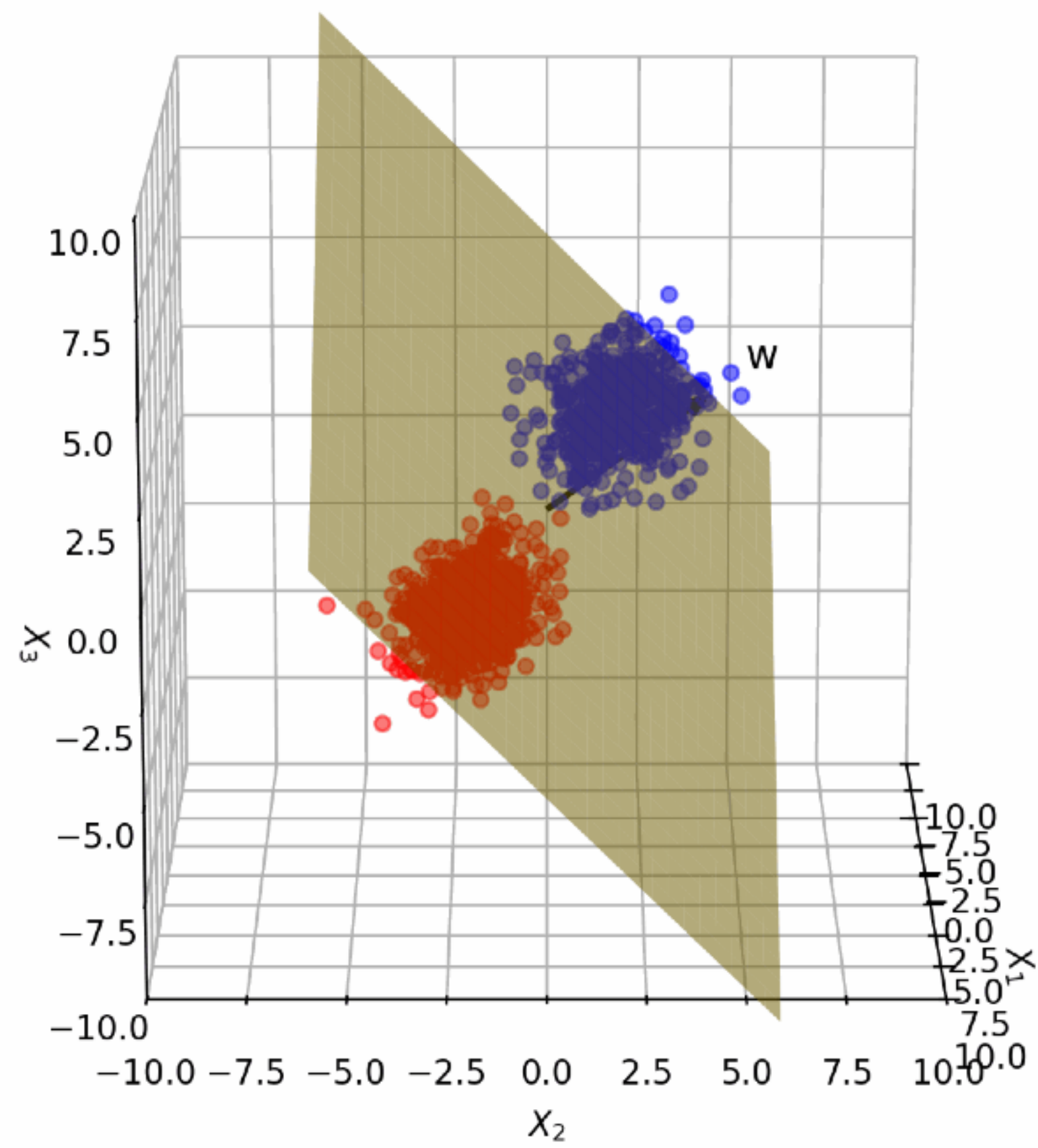
En dimension d : $g(\mathbf{x}) = \alpha + \beta^\top \mathbf{x}, \quad \beta \in \mathbb{R}^d$

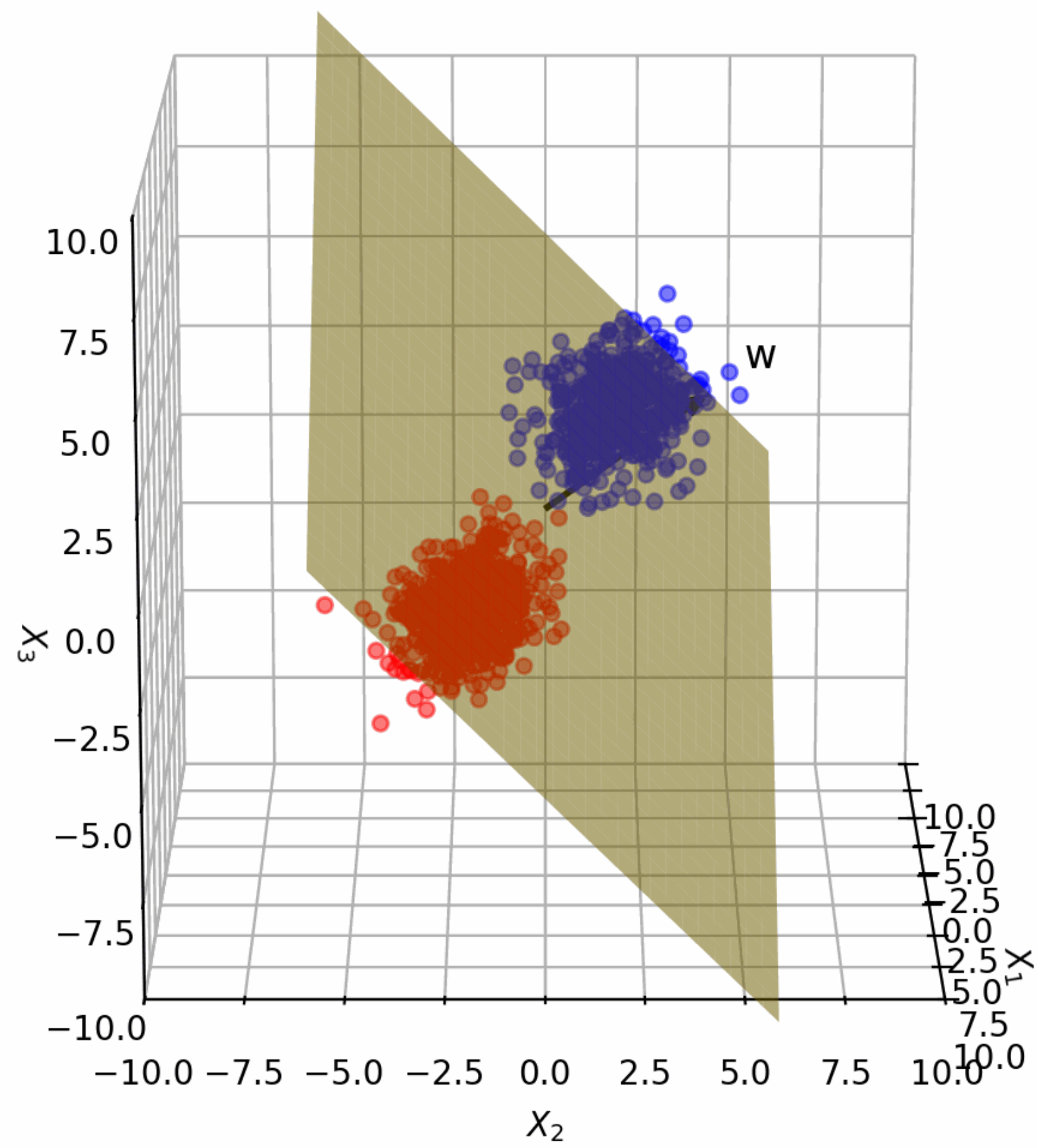
Quel est l'ensemble des \mathbf{x} tels que $\{g(\mathbf{x}) = 0\}$?

Unrespaced dimension d-1: unhyperplan

séparat eur lin é air e n d i n e n s i o n d

Machine learning classic: zero-to-hero



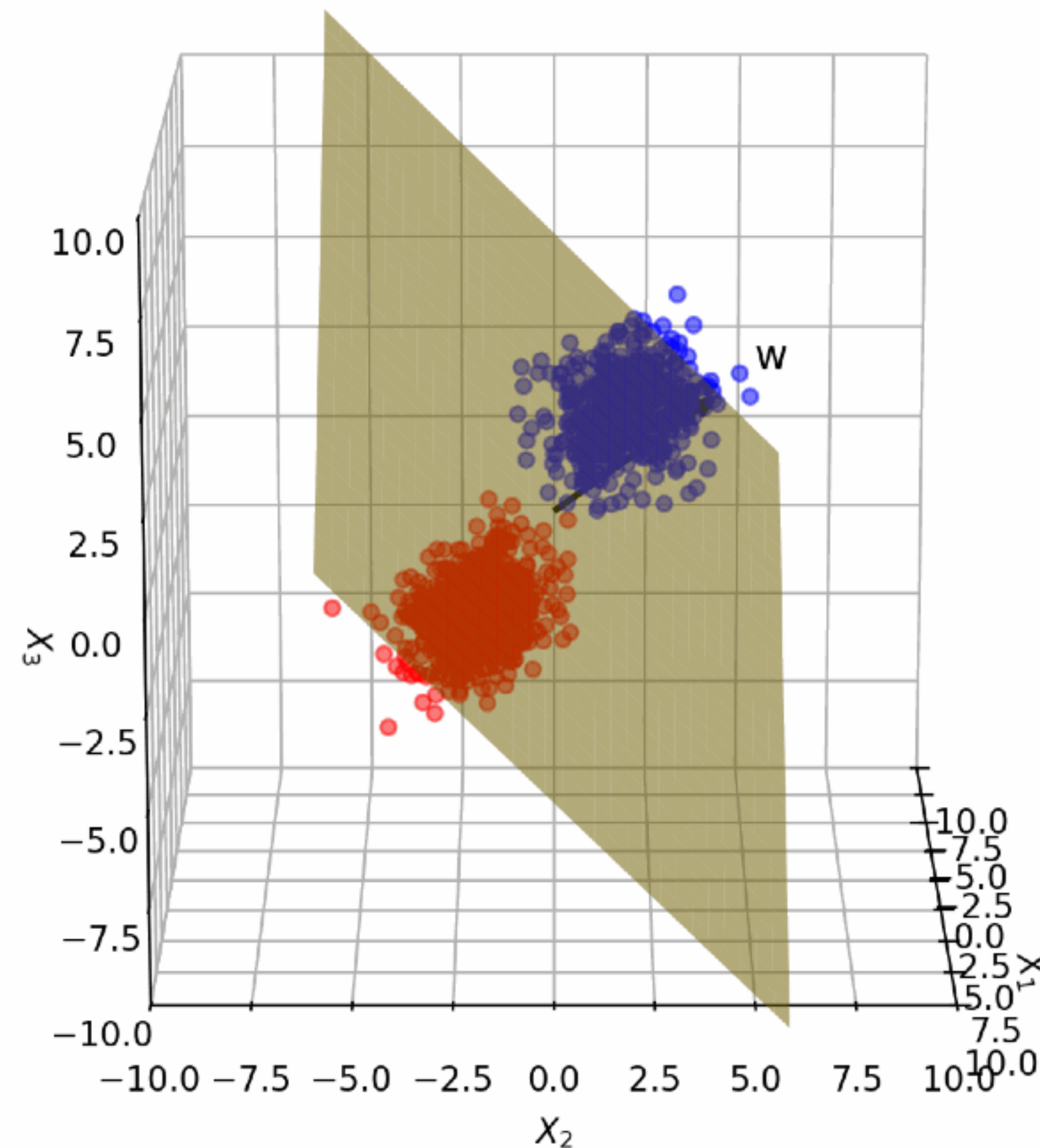


Et si on utilise trois variables:

$$g(\mathbf{x}) = \alpha + \beta_1 \mathbf{x}^1 + \beta_2 \mathbf{x}^2 + \beta_3 \mathbf{x}^3$$

$$g(\mathbf{x}) = \alpha + \beta^\top \mathbf{x}$$

Que forment les \mathbf{x} tels que $\{g(\mathbf{x}) = 0\}$?



En dimension d: $g(\mathbf{x}) = \alpha + \beta^\top \mathbf{x}$, $\beta \in \mathbb{R}^d$

Que forment les \mathbf{x} tels que $\{g(\mathbf{x}) = 0\}$?

Un espace de dimension d-1: un hyperplan



$$\min_{\alpha \in \mathbb{R}, \beta \in \mathbb{R}^d} \sum_{i=1}^n (\mathbb{1}_{\{\alpha + \beta^\top \mathbf{x}_i \geq 0\}} - y_i)^2$$

Fonction non différentiable (discontinue même) difficile à optimiser

