

Classificação Difeomorfa das Variedades Euclidianas Compactas Tridimensionais

Classe	Geradores de Γ	r_{inj}	Volume
\mathcal{G}_1	a, b, c	$\frac{1}{2} a $	$ a \times b \cdot c $
\mathcal{G}_2	$(A_1, a), b, c$	$\frac{1}{2} \min\{ a , b \}$	$ a b \times c $
\mathcal{G}_3	$(B, a), b, c$	$\frac{1}{2} \min\{ a , b \}$	$\frac{\sqrt{3}}{2} a b ^2$
\mathcal{G}_4	$(C, a), b, c$	$\frac{1}{2} \min\{ a , b \}$	$ a b ^2$
\mathcal{G}_5	$(D, a), b, c$	$\frac{1}{2} \min\{ a , b \}$	$\frac{\sqrt{3}}{2} a b ^2$
\mathcal{G}_6	$(A_1, a),$ $(A_2, b + c),$ $(A_3, a + b + c)$	$\frac{1}{2} \min\{ a , b , c \}$	$2 a b c $
\mathcal{B}_1	$(E, a), b, c$	$\frac{1}{2} \min\{ a , b , c \}$	$ a \times b c $
\mathcal{B}_2	$(F, a), b, c$	$\frac{1}{2} \min\{ a , b , c \}$	$ a \times b c - (a + \frac{1}{2}b) $
\mathcal{B}_3	$(A_1, a), (E, b), c$	$\frac{1}{2} \min\{ a , b , c \}$	$ a b c $
\mathcal{B}_4	$(A_1, a), (E, b + c), 2c$	$\frac{1}{2} \min\{ a , b , 2 c \}$	$2 a b c $

Transformações Ortogonais para as Rotações

$$A_1 = \begin{pmatrix} 1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & -1 \end{pmatrix}, \quad A_2 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & -1 \end{pmatrix}, \quad A_3 = \begin{pmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{pmatrix},$$

$$B = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 0 & -1 \\ 0 & 1 & -1 \end{pmatrix}, \quad C = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 0 & -1 \\ 0 & 1 & 0 \end{pmatrix} \quad \text{and} \quad D = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 0 & -1 \\ 0 & 1 & 1 \end{pmatrix}.$$

Transformações Ortogonais para as Reflexões

$$E = \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & -1 \end{pmatrix} \quad \text{and} \quad F = \begin{pmatrix} 1 & 0 & 2 \\ 0 & 1 & 1 \\ 0 & 0 & -1 \end{pmatrix}.$$