$$\mathbb{R}^{n\times n} \xrightarrow[\text{Pol/Diff}]{\det} \mathbb{R}: \quad \mathbb{R}^{n\times n} \xrightarrow[\text{lin}]{{}^{E}\det} \mathbb{R} \text{ Einheitsmatrix}$$

$$\mathcal{G}_n^{\mathbb{R}} \subsetneq \mathbb{R}^{n\times n} \text{ off}$$

$$A \in \begin{cases} \mathrm{GL}_n^{\mathbb{R}} \\ \mathrm{GL}_2^{\mathbb{R}} \end{cases} \xrightarrow[\text{inv}]{F} \begin{cases} \mathrm{GL}_n^{\mathbb{R}} \\ \mathrm{GL}_2^{\mathbb{R}} \end{cases} \ni A^{-1} \Rightarrow \begin{cases} F \text{ stet/tot diff} \\ {}^{A}\underline{F}B = -A^{-1}BA^{-1} \end{cases}$$

$${}^{A}F_{k\ell} = A^{-1}_{k\ell} \text{ rat Fkt of } A_{ij} \Rightarrow \text{ stet/diff}$$

$${}^{A}F\,A = I: \quad \text{diff product rule}$$