Consider a Lie group with a unitary representation into a space of holomorphic functions defined on a domain $D$ of $\mathbb{C}$ and in $L^2(\mu)$, the measure $\mu$ is the unitarizing measure of the representation. On finite dimensional examples, we show that this unitarizing measure is also the invariant measure for some differential operators on $D$. We calculate these operators and we develop the concepts of unitarizing measure and invariant measure for an OU operator (differential operator associated to the representation) in the following elementary cases:

A) The commutative groups $(\mathbb{R}, +)$ and $(\mathbb{R}^* = \mathbb{R} - 0, \times)$.

B) The multiplicative group $M$ of $2 \times 2$ complex invertible matrices and some subgroups of $M$.

C) The three dimensional Heisenberg group.

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