Claim if \( x, y \in g \) (a Lie algebra)

Then

\[
\text{Orb}(x) \times \text{Orb}(y) \xrightarrow{\phi} y(z)
\]

produce the same pushforward measure.

The direct approach: Pullback a function in \( z \) & multiply by Gaussians in \( x, y \). Will it work?

* \( F \) need not be invariant.

BCH can be interpreted as a function \( y \times y \to g \). As such, what is its integral against a Gaussian?