```mathematica
𝔼[M_?MatrixQ] := MatrixExp[M];
Simplify[𝔼[η_1 y].𝔼[α_1 a].𝔼[ξ_1 x].𝔼[η_2 y].𝔼[α_2 a].𝔼[ξ_2 x] == 𝔼[η_0 y].𝔼[α_0 a].𝔼[ξ_0 x] /.
  {η_0 → η_1 + (e^(-2 α_1 η_2))/(1+η_2 ξ_1), α_0 → α_1 + α_2 + Log[1 + η_2 ξ_1], ξ_0 → (ξ_2+ξ_1 (e^(-2 α_2 +η_2 ξ_2)))/(1+η_2 ξ_1)}]
```