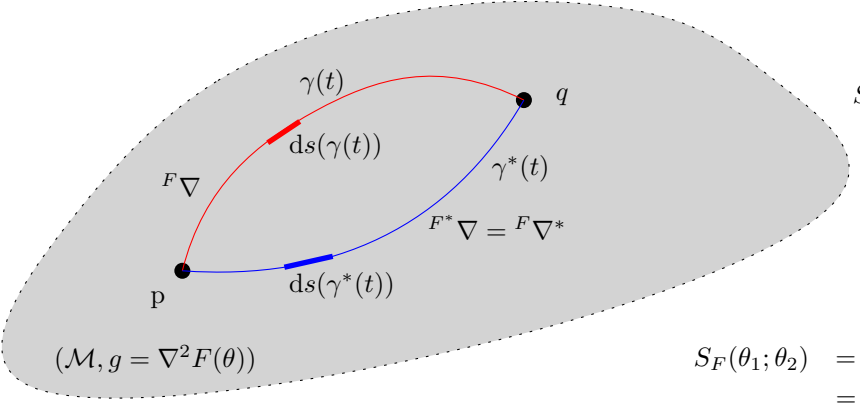

$$
\begin{aligned}
S_F(\theta_1;\theta_2) &= \int_0^1 \mathrm{d}s^2(\gamma(t))\mathrm{d}t \\
&= \int_0^1 \mathrm{d}s^2(\gamma^*(t))\mathrm{d}t \\
&= S_{F^*}(\eta_1;\eta_2)
\end{aligned}
$$

$$
\begin{aligned}
S_F(\theta_1;\theta_2) &= B_F(\theta_1 : \theta_2) + B_F(\theta_2 : \theta_1) \\
&= (\theta_2 - \theta_1)^\top(\eta_2 - \eta_1) = S_{F^*}(\eta_1;\eta_2)
\end{aligned}
$$

$$
\begin{aligned}
\theta(\gamma(t)) &= \theta(p) + t(\theta(q) - \theta(p)) \\
\eta(\gamma^*(t)) &= \eta(p) + t(\eta(q) - \eta(p))
\end{aligned}
$$