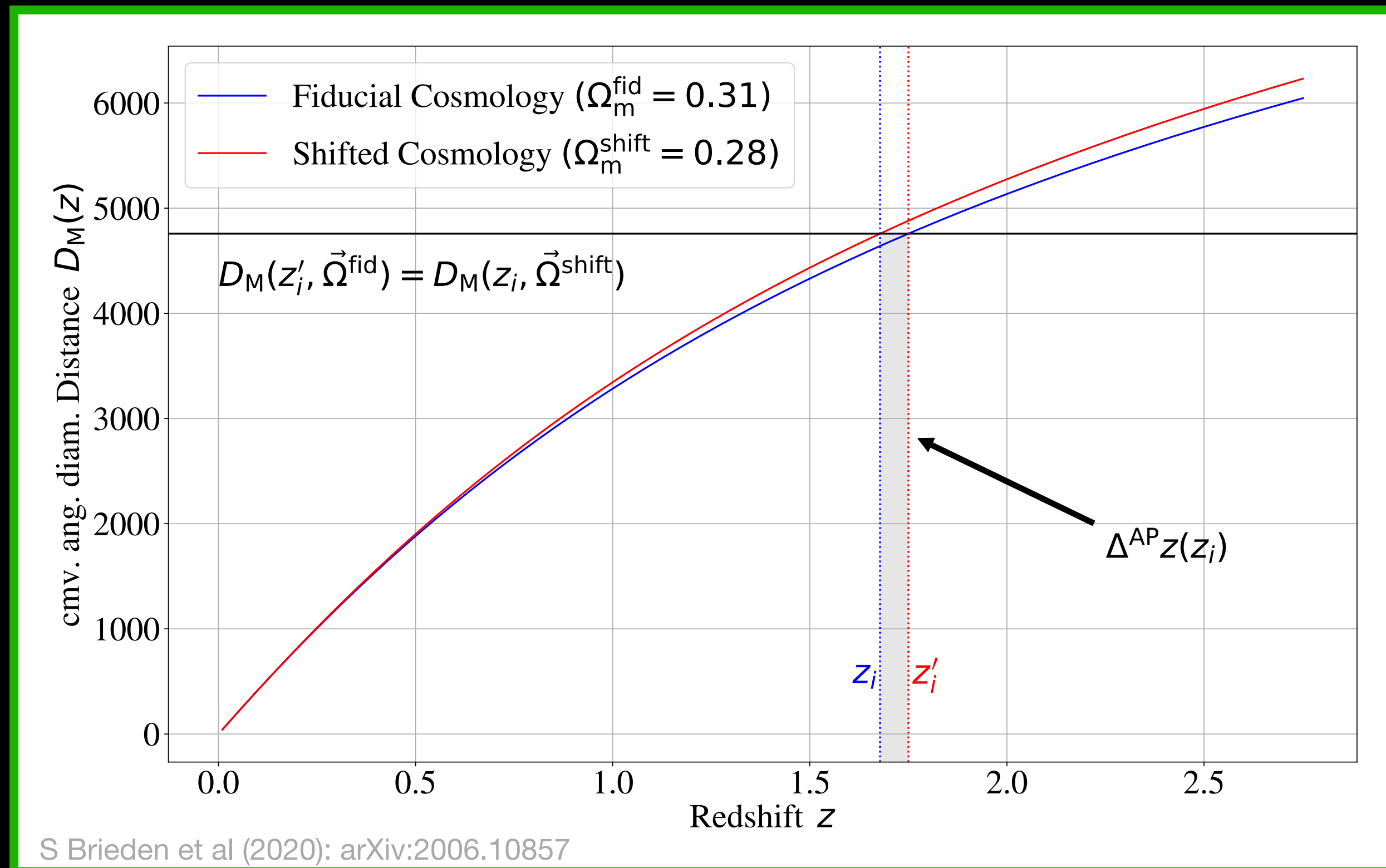


# How is the DESI BAO analysis different?

- **First step:** AP-like shift



**blind cosmology**  $w_0, w_a, \Omega_m$  (not revealed!)

$(ra, dec, z) \longrightarrow (X, Y, Z)$

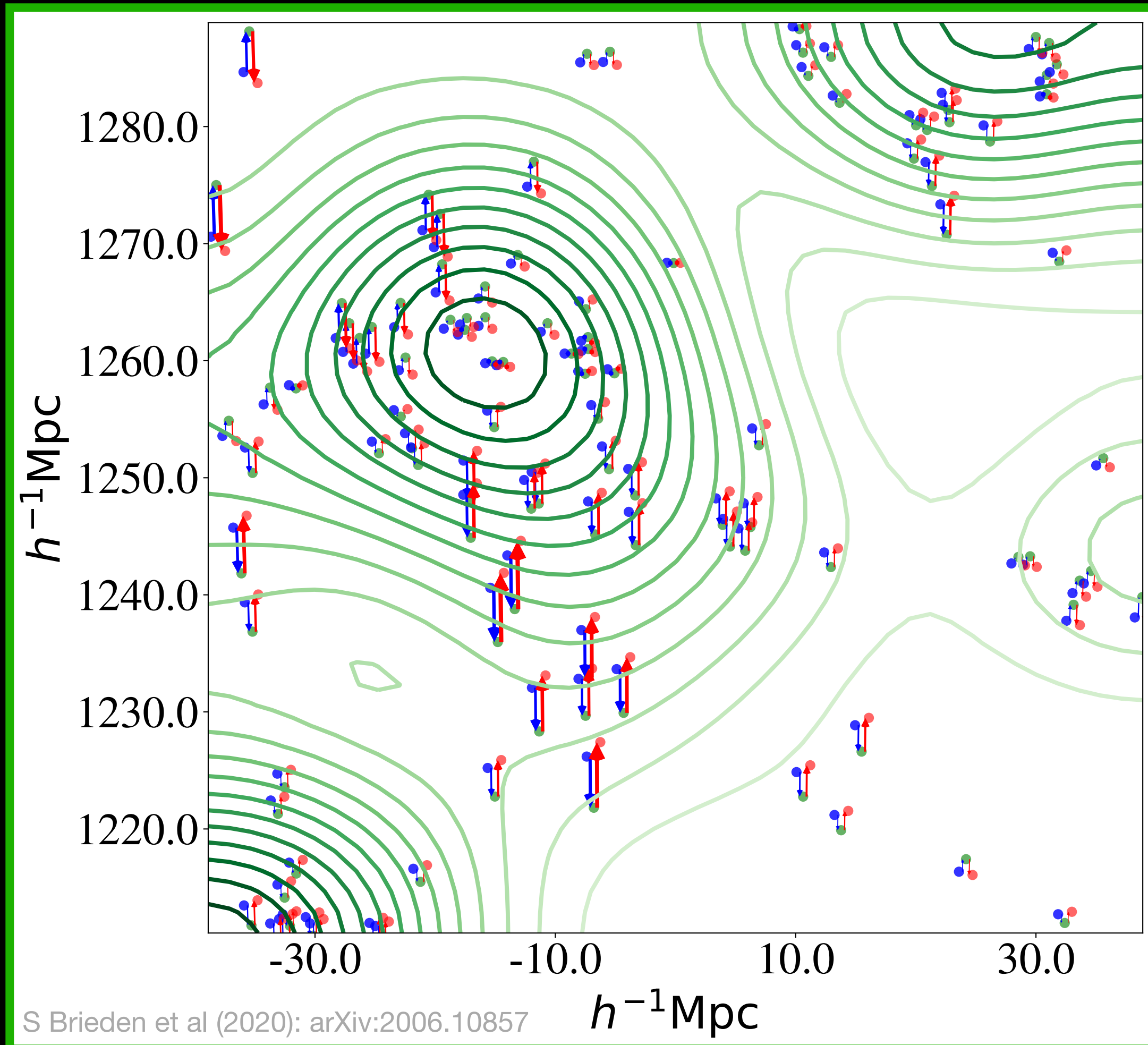
fiducial cosmology

$(ra, dec, z') \longleftarrow (X, Y, Z)$

$$z_i(\Omega_{\text{true}}) \xrightarrow{\Omega_{\text{blind}}} D_M(z_i, \Omega_{\text{blind}}) = D_M(z'_i, \Omega_{\text{fid}}) \xrightarrow{\Omega_{\text{fid}}} z'_i(\Omega_{\text{blind}})$$

# How is the DESI BAO analysis different?

- **Second step:** RSD shift



The so-called displacement field:  $\Psi = \nabla \phi$

$$\nabla \cdot \Psi = -\frac{\delta_g}{b_1}, \quad \vec{r} = \vec{x} + f(\Psi \cdot \hat{r}) \hat{r}$$

$$\mathbf{r}' = \mathbf{r} - f^{\text{fid}}(\Psi \cdot \hat{r})\hat{r} + f^{\text{blind}}(\Psi \cdot \hat{r})\hat{r}$$