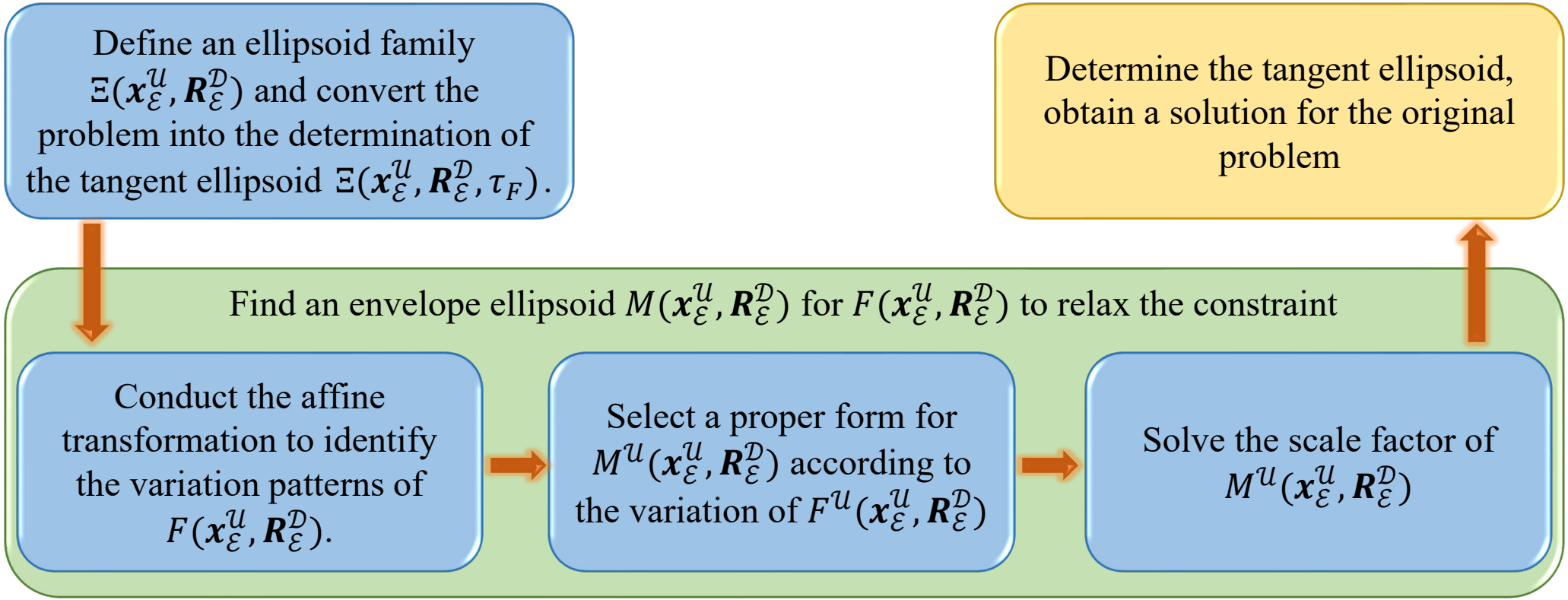
Define an ellipsoid family $\Xi(\boldsymbol{x}_{\mathcal{E}}^{\mathcal{U}}, \boldsymbol{R}_{\mathcal{E}}^{\mathcal{D}})$ and convert the problem into the determination of the tangent ellipsoid $\Xi(\boldsymbol{x}_{\mathcal{E}}^{\mathcal{U}}, \boldsymbol{R}_{\mathcal{E}}^{\mathcal{D}}, \tau_F)$.
Determine the tangent ellipsoid, obtain a solution for the original problem
Find an envelope ellipsoid $M(\boldsymbol{x}_{\mathcal{E}}^{\mathcal{U}}, \boldsymbol{R}_{\mathcal{E}}^{\mathcal{D}})$ for $F(\boldsymbol{x}_{\mathcal{E}}^{\mathcal{U}}, \boldsymbol{R}_{\mathcal{E}}^{\mathcal{D}})$ to relax the constraint
Conduct the affine transformation to identify the variation patterns of $F(\boldsymbol{x}_{\mathcal{E}}^{\mathcal{U}}, \boldsymbol{R}_{\mathcal{E}}^{\mathcal{D}})$.
Select a proper form for $M^{\mathcal{U}}(\boldsymbol{x}_{\mathcal{E}}^{\mathcal{U}}, \boldsymbol{R}_{\mathcal{E}}^{\mathcal{D}})$ according to the variation of $F^{\mathcal{U}}(\boldsymbol{x}_{\mathcal{E}}^{\mathcal{U}}, \boldsymbol{R}_{\mathcal{E}}^{\mathcal{D}})$
Solve the scale factor of $M^{\mathcal{U}}(\boldsymbol{x}_{\mathcal{E}}^{\mathcal{U}}, \boldsymbol{R}_{\mathcal{E}}^{\mathcal{D}})$