

1. $(EA\lambda')' = (EAu')'$

2. varies linearly along the x-axis

3. Optimal area profile is independent of the load.

4.
$$\frac{\partial F}{\partial z} - \frac{d}{dx} \left(\frac{\partial F}{\partial z_x} \right) - \frac{d}{dy} \left(\frac{\partial F}{\partial z_y} \right) = 0$$

5. Poisson's Equation in 2D

6. Both design and adjoint equations.

7. All of the above

8 free-fixed

9. $F = 10 \cdot \text{ones}(n+1,1)$

10. Numerically; using forward-difference.