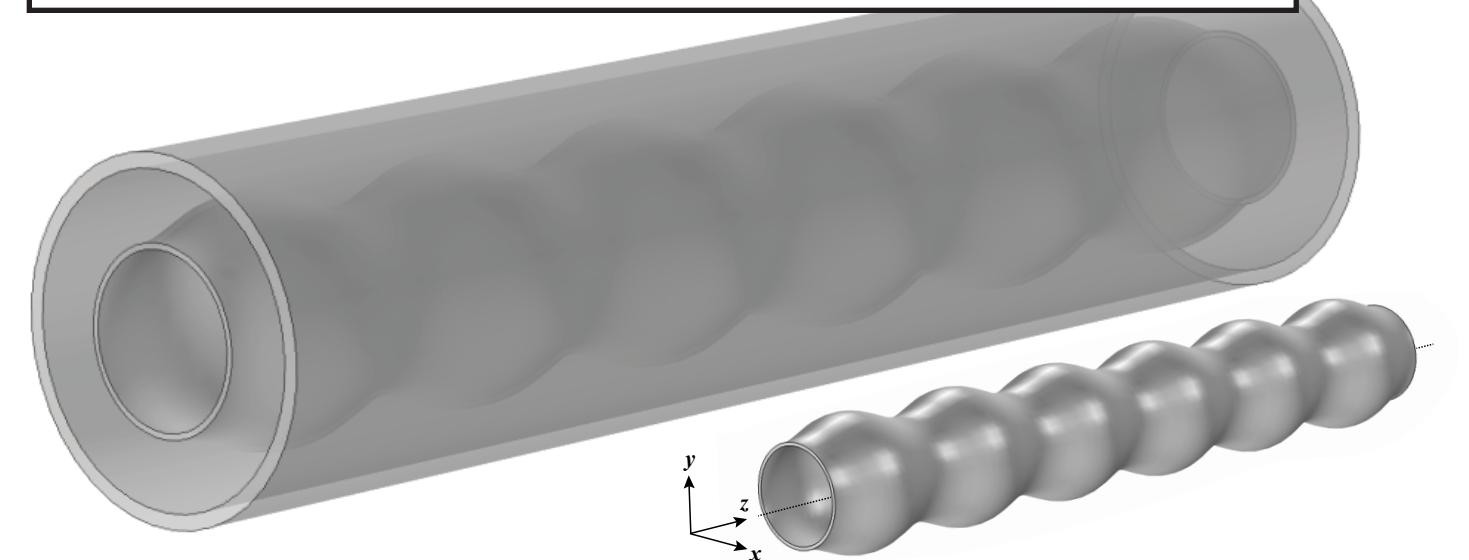
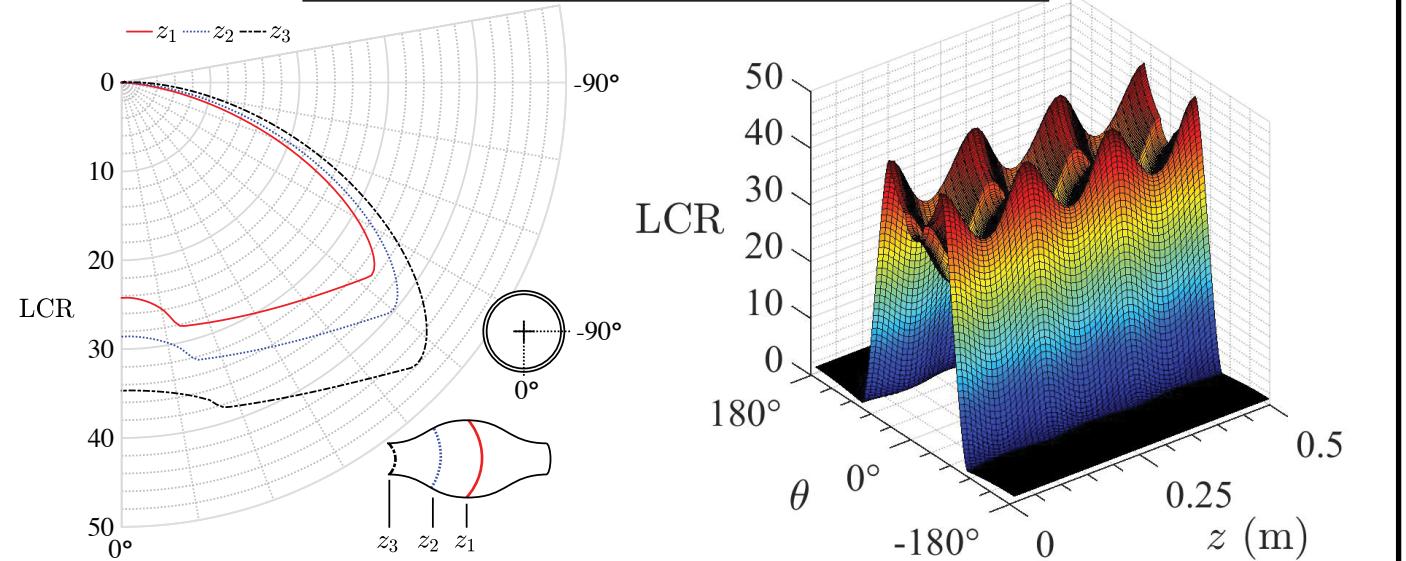


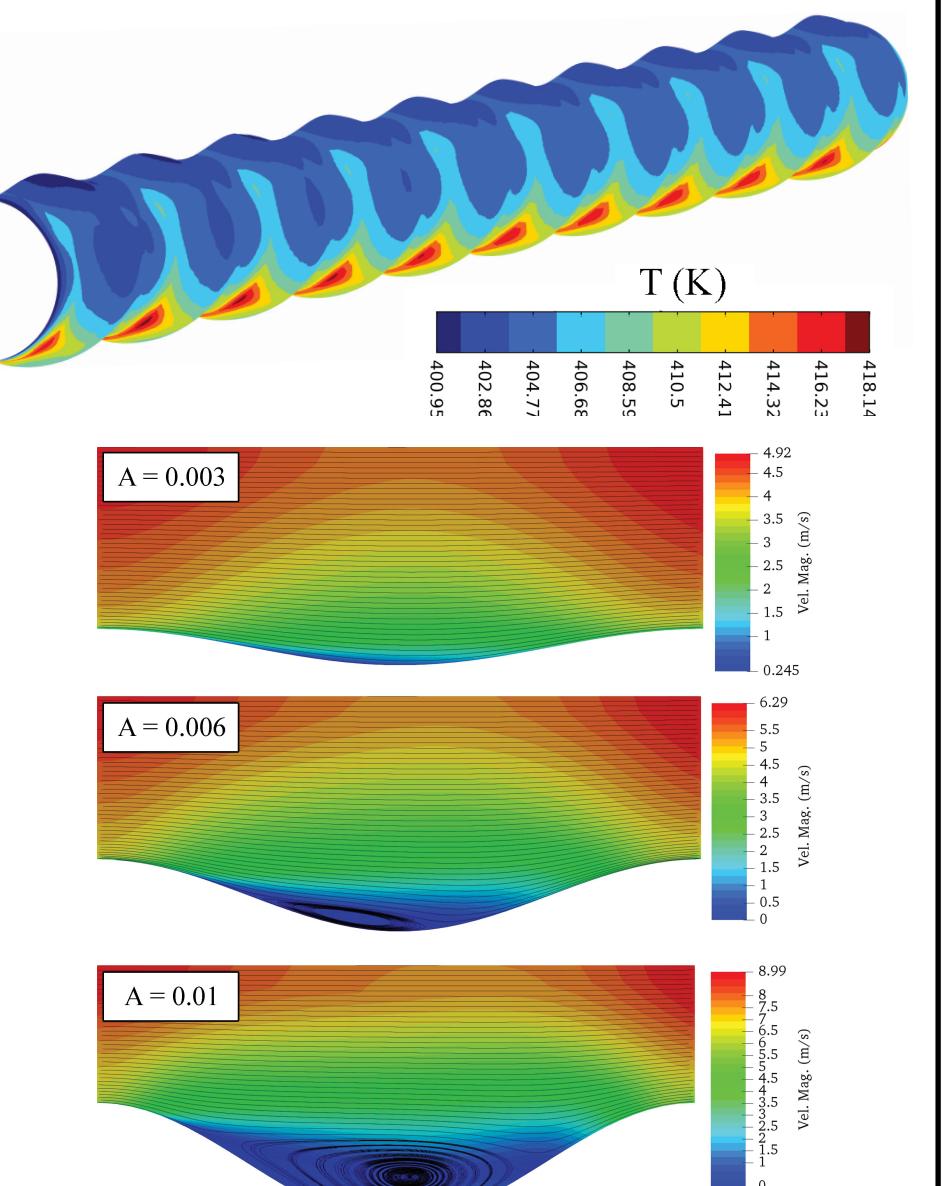
## Proposed symmetric wavy absorber



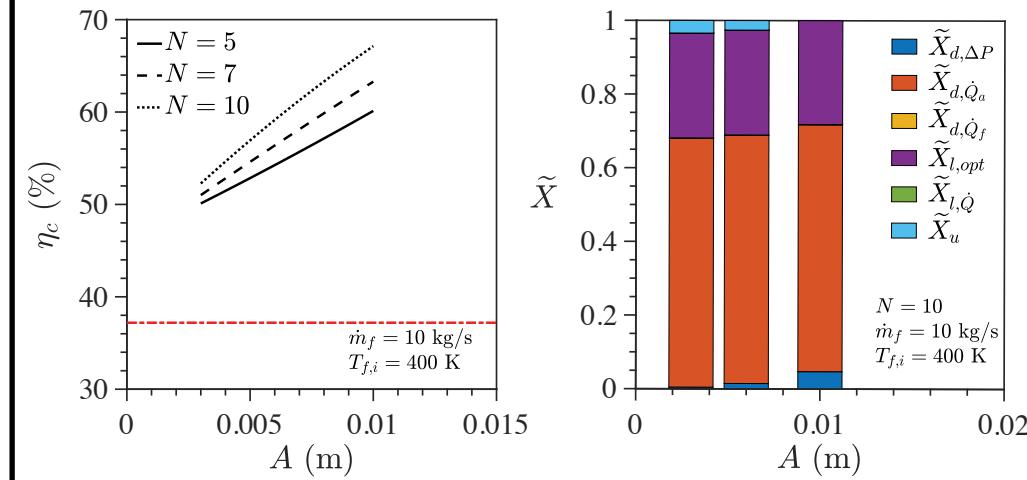
## 3D optical modeling



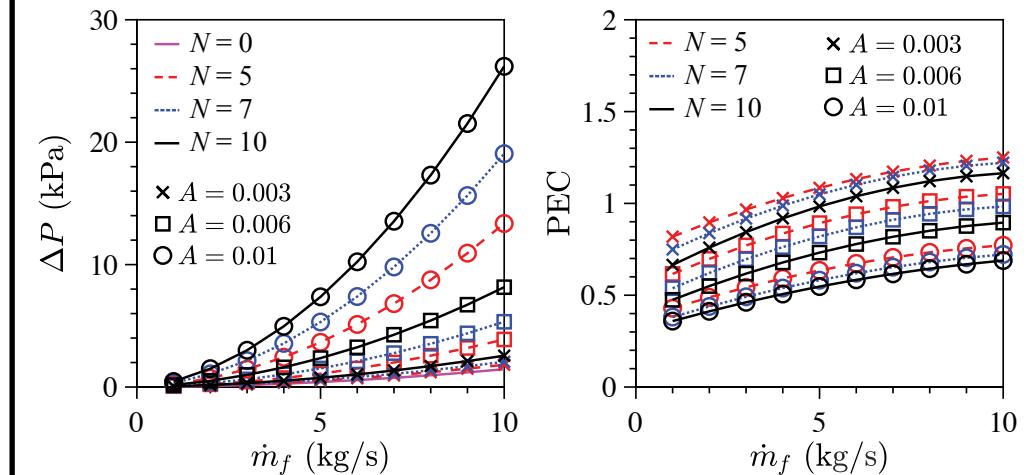
## 3D thermal modeling



## Thermal-hydraulic analysis



(a) First and second law efficiency



(b) Pressure drop and performance evaluation criteria