**BBQ Grill Problem**

58:143 Computational Fluid & Thermal Engineering Final Project

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### Geometry of BBQ Grill

Shell of the grill and meat are modeled

![Popular BBQ grill](image1)

- **Meat positions**
  1. Center  
  2. Horizontal shift  
  3. Vertical shift  
  4. Shifted in both direction

- **Velocity vectors – ELLIPSE grill**
  1. Center  
  2. Horizontal shift  
  3. Vertical shift  
  4. Shifted in both direction

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### Model used for our study

- **Solid (Meat)**
  - Heat conduction  
  - Radiation surface  
  - Constant material properties  
  - Convection due to density change

- **Fluid (Air)**
  - Turbulence: k-ε model  
  - Solve energy equation  
  - Temperature dependent material properties

- **Boundary condition**
  - Assign constant temperature, 800 degrees  
  - Radiation surface

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### Do you have an experience?

- Taking much time to grill meat  
- Cannot grill meat fine  
- Getting dark during BBQ

**BBQ**

- Rely on experience  
- Lack of science  
- Include complicated phenomenon (conduction, convection, radiation)

**Objective of our project**

To find an effective way to grill meat

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http://7rinhonpo.jp/archives/50456000.html