

$$ds * dA * \frac{\text{rate of energy absorbed}}{\text{volume}} = (I|_s - I|_{s+ds})dA$$

$$\int_{I_\lambda e^{\tau_\lambda}|_{\tau_\lambda=0}}^{I_\lambda e^{\tau_\lambda}|_{\tau_\lambda=\tau_\lambda}} (dI_\lambda e^{\tau_\lambda}) = \int_{\tau_\lambda=0}^{\tau_\lambda=\tau_\lambda} S(\tau_\lambda, \hat{s}) e^{\tau_\lambda} d\tau_\lambda$$

## Part I

# OpenFOAM Radiation Models

## 1 P1 Model

### 1.1 How to use:

#### 1.1.1 Introduction

The P1 model is part of spherical harmonics model and it does well in optically thick medium [1].

## Part II

# Bibliography

## References

- [1] Modest, M. F. *Radiative heat transfer* (Academic press, 2013).