

# TATTVA'25



I I S E R M O H A L I

# Kinone Training Dashboard

Stop after epoch

Immediate stop

Logs

Graphs

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1 ○ [INFO] 00:00:00 • Starting Training Script
2 ○ [INFO] 00:00:00 • Processed Command-Line Arguments
3 ○ [INFO] 00:00:00 • Loaded Dataset Module
4 ○ [DEBUG] 00:00:01 • Using capped positive class weights.
5 ○ [INFO] 00:00:02 • Model and Optimizer Initialized
6 ○ [INFO] 00:00:02 • Epoch: 1/10
7   ○ [INFO] 00:00:11 • Batch 1, Loss: 1.4547
8   ○ [INFO] 00:01:55 • Batch 11, Loss: 1.4956
9   ○ [INFO] 00:03:44 • Batch 21, Loss: 0.7667
10  ○ [INFO] 00:05:33 • Batch 31, Loss: 1.0432
11  ○ [INFO] 00:07:20 • Batch 41, Loss: 0.7900
12  ○ [INFO] 00:09:08 • Batch 51, Loss: 0.8063
13  ○ [INFO] 00:10:53 • Batch 61, Loss: 0.9168
14  ○ [INFO] 00:12:20 • Batch 71, Loss: 1.0851
```

$$\frac{dP}{dt} = -\frac{6\pi\eta r^2}{r^2} \frac{dP}{dt} = -6\pi\eta r$$

We need to know solution equation of wave P(E)

For an ideal gas,  $P_{rad} = \frac{aT^4}{3}$

$$P_{gas} = nk_B T = \frac{\rho k_B T}{\mu m_H}$$

$$\frac{P_{rad}}{P_{gas}} = \frac{1/8 \frac{aT^4}{\mu m_H}}{\frac{\rho}{\mu m_H} k_B T} \propto \frac{T^3}{\rho}$$

$$\rightarrow T = C' \rho^{1/3} \left( \frac{P_{rad}}{P_{gas}} \right)^{1/3}$$

$\frac{1}{\rho} \left( \frac{P_{rad}}{P_{gas}} \right)^{1/3} \propto T$   
 $\rightarrow T \propto \rho^{1/3}$   
 $\rightarrow T \propto \rho^{1/3} \Rightarrow T \propto \rho^{1/3}$   
 $\rightarrow T \propto \rho^{1/3} \Rightarrow T \propto \rho^{1/3}$

ln P

$$k_B T \propto \frac{GMm}{R} \rightarrow T \propto \frac{M}{R}$$

$$\frac{P_{rad}}{P_{gas}} = 7 \times 10^{-4} \left( \frac{M}{M_\odot} \right)^2 \quad \frac{P_{rad}}{P_{gas}} \propto M^2$$