This repository contains MATLAB scripts to generate **Figures 3H and 3I**

The following codes generate **Figure 3H**

**Main Script**

* **Code\_FIG3H.m**  
  This code computes and plots the **probability distribution of the fraction of CpGs methylated** across a selected genomic region  
    
  You can change the selected region of interest by switching between ActiveTot, IntermediateTot, and RepressedTot in lines 45–49.

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The following codes generate **Figures 3I**

**Main Script**

* **Code\_FIG3I.m**  
  This code generates a **correlation plot** between **gene expression** and **CpG methylation fraction**, including statistical analysis.  
    
  To correctly visualize the output distributions on a **logicle scale**, make sure to include the **@logicleTransform** folder in the same directory or MATLAB path.