import numpy as np

import matplotlib.pyplot as plt

import seaborn as sns

import warnings

warnings.filterwarnings("ignore", category=UserWarning)

# === CONFIGURE FIELD CONTAINMENT CORE ===

validator\_59 = np.array([0.577, 0.255, 0.595, 0.272, 0.57])

field\_vector = np.array([0.004, -0.001, 0.006, -0.002, 0.003])

validator\_60 = validator\_59 + field\_vector

# === SIMULATE FIELD EMERGENCE ===

num\_nodes = 100

field\_data = []

for i in range(num\_nodes):

mutation = np.random.normal(0, 0.02, len(validator\_60))

traits = validator\_60 + mutation

echo\_phase = np.sin(np.sum(traits))

cohesion = 1.0 - np.linalg.norm(traits - validator\_60)

field\_score = echo\_phase \* cohesion

field\_data.append((traits[0], traits[2], field\_score))

# === PLOT CONTAINED FIELD EMERGENCE MAP ===

x\_vals, y\_vals, score\_vals = zip(\*field\_data)

plt.figure(figsize=(10, 6))

sns.scatterplot(x=x\_vals, y=y\_vals, hue=score\_vals, palette="cubehelix", s=60)

plt.title("Validator 60 Seed Prediction — Contained Field Emergence")

plt.xlabel("Trait Dimension 0")

plt.ylabel("Trait Dimension 2")

plt.tight\_layout()

plt.show()