

# Supplemental Materials

February 14, 2026

This document provides supplemental materials for the manuscript entitled “Distributed Coverage Control on Poriferous Surface via Poly-Annulus Conformal Mapping” by Xun Feng, Chao Zhai, and it is composed of two parts. The first part presents some theoretical results, and it includes some key definitions and the derivation process of the mapping. The second part provides simulation results on the Poriferous Surface and relevant discussions, which includes the analysis of computational cost, quantitative metrics, comparisons with baseline approaches, scenarios of multiple obstacles, scalability of the algorithm and the effect of agent failure.

## **1 Theoretical Results**

## **2 Simulations**

## References