

The diagram illustrates a rectangular domain with a central obstacle. The domain is divided into several regions:

- Central Obstacle:** A large rectangular region in the center, filled with a green dotted pattern. It contains two smaller rectangular sub-regions labeled P_3 and P_4 .
- Boundary Conditions:** The domain is bounded by a dashed white line. Arrows indicate the direction of flow or boundary conditions:
 - Top boundary: Two arrows pointing left.
 - Right boundary: One arrow pointing down.
 - Bottom boundary: Two arrows pointing right.
 - Left boundary: One arrow pointing right.
- Flow Regions:** The domain is divided into several regions by the obstacle and boundary conditions:
 - Top Region:** A blue region above the central obstacle, bounded by a dashed white line.
 - Bottom Region:** A blue region below the central obstacle, bounded by a dashed white line.
 - Left Region:** A blue region to the left of the central obstacle, bounded by a dashed white line.
 - Right Region:** A blue region to the right of the central obstacle, bounded by a dashed white line.
- Other Regions:** There are two additional regions labeled P_1 and P_2 on the right side of the domain, separated by a vertical dashed white line. P_1 is a gray region, and P_2 is a green dotted region.

 P_2

4