Hierarchical Routing Using k-SPR

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Router Selection Code

```c
// Implement k-SPR-C algorithm
void Goal(k, SPR_C1)
ComputeCoveringNumbers();
for (i = 0; i < n; i++) is_covered[i] = 0;
for (u = 0; u < k - 1; u++) source_array[u] = 0;
for (i = 1; i < n; i++)
    // If (M[i] == 0)
    // set M[i] = k
    // for (j = 0; j < n; j++)
    //     if (M[j] != 0) M[j] = k
    n = 1;
for (p = 0; p < n; p++)
    // If (p[i] == 0)
    // set p[i] = k
    // for (j = 0; j < n; j++)
    //

Router Set Size

General Definitions

- Node — think of each node as a computer with a unique id
- Graph — a set of nodes with edges connecting them (network)
- Router — a special node with a larger view of the network
- Super Router — a special router with an even larger view of the network

Goals

- Install NS-2 Wireless Network Simulator
- Study AODV and k-SPR routing protocols
- Create new hierarchical routing protocol for wireless networks based on k-SPR and AODV

Link/Diameter Comparison

Number of Nodes in Graph

Average Links/Node Diameter

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Average Links/Node Diameter