**Introduction**

- **Goal:**
  - Designed a MAC layer protocol using the characteristic of every node to identify every nodes and route packets in a mobility ad-hoc network.

- **State of the Art:**
  - Anonymous routing Based on Characteristics (ABC) Protocol which:
    - replaces IP addresses
    - Is implemented on network layer
    - Is any-cast or multi-cast protocol
    - Supports a large scale ad hoc network
    - Supports request/reply communication model

<table>
<thead>
<tr>
<th>Implementation</th>
<th>McFeron</th>
<th>MIDM</th>
<th>MIDM</th>
<th>ABC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head/Fragmented</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Destination</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

- **Gradient approach**
  - Source node spreads characteristic flow from top to bottom.
  - Packets choose route from bottom to top to start communication.

**Packet Routing**

- Node starts to communication by creating “characteristic” packet
- Nodes will re-broadcast the characteristic packets if they are not destinations of the packets.
- Both simple flooding and probabilistic scheme were used to find an efficient way to transmit packets.
- Simple flooding: nodes re-broadcast packets without processes
- Probabilistic:
  - Random number (0-10)
  - Node characteristic weights
  - Fixed threshold value (Depends on Density of network)
  - The higher the weight is, the less chances to drop the packet

**Simulation Design & Performances**

- **Work flow**
- **Performances**

**Conclusions**

- **Conclusion:**
  - This protocol will take over the job of IP address in MANETs
  - It supports a large scale network and the performances are acceptable.

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**MAC Protocol for Characteristic-Based Communication**

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**M.Sc. in Computer Science**

( Mobile and Ubiquitous Systems)