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## LIST OF SYMBOLS AND ABBREVIATIONS

### Symbols

|                             |   |  |
|-----------------------------|---|--|
| $d(\text{CH}_i, \text{BS})$ | - | Distance between Cluster Head $i$ and the Base Station |
| $E(\text{CH}_i)$            | - | Energy consumption of Cluster Head $i$                 |
| $E_{\text{bit}}$            | - | Energy necessary to process one bit of data            |
| $\sigma$                    | - | Node density   |
| $E_{\text{amp}}$            | - | Transmitter amplifier circuitry dissipation per bit    |
| $E_{\text{ele}}$            | - | Transmitter circuitry dissipation per bit              |

### Abbreviations

|        |   |   |
|--------|---|---|
| ADC    | - | Analog to Digital Converter   |
| ADV    | - | Advertisement   |
| AJAX   | - | Asynchronous JavaScript And XML   |
| BS     | - | Base Station  |
| BP     | - | Basis Pursuit   |
| CSMA   | - | Carrier Sense Medium Access   |
| CPU    | - | Central Processing Unit   |
| CH     | - | Cluster Head  |
| CH ADV | - | Cluster Head ADVERTISEMENT  |
| CHN    | - | Cluster Head Nominee  |
| CHSV   | - | Cluster Head Selection Value  |
| CIDHR  | - | Cluster ID based Hierarchical Routing   |
| CM     | - | Cluster Member  |
| CR     | - | Cluster Region  |
| C4ISR  | - | Command, Control, Communications, Computing, Intelligence, Surveillance, Reconnaissance and Targeting systems |

|       |  |
|-------|--|
| CS    | - Compressed Sensing                                     |
| DoS   | - Denial of Service                                      |
| DAC   | - Digital to Analog Converter                            |
| DD    | - Directed Diffusion                                     |
| E2C   | - Energy Efficient Clustering                            |
| EECS  | - Energy Efficient Clustering Scheme                     |
| XML   | - eXtensible Markup Language                             |
| FND   | - First Node Dies  |
| GUI   | - Graphical User Interface                               |
| HT    | - Hard Threshold   |
| HVAC  | - Heating, Ventilating and Air Conditioning              |
| HRPs  | - Hierarchical Routing Protocols                         |
| HEED  | - Hybrid, Energy - Efficient, and Distributed clustering |
| HTTP  | - Hyper Text Transfer Protocol                           |
| ID    | - Identification   |
| IEEE  | - Institute of Electrical and Electronics Engineers      |
| LND   | - Last Node Dies   |
| LASSO | - Least Absolute Shrinkage and Selection Operator        |
| LARS  | - Least Angle Regression                                 |
| LTS   | - Light Weight Tree Based Synchronization                |
| LEACH | - Low Energy Adaptive Clustering Hierarchy               |
| MAC   | - Medium Access Control                                  |
| MEMS  | - Micro Electro Mechanical Systems                       |
| MLHR  | - Multi Level hierarchical Routing                       |
| MTHR  | - Multi Tier Hierarchical Routing                        |
| NS2   | - Network Simulator 2                                    |
| OS    | - Operating System                                       |
| OMP   | - Orthogonal Matching Pursuit                            |
| PDR   | - Packet Delivery Ratio                                  |

|         |   |  |
|---------|---|--|
| PSV     | - | Parent Selection Value                                       |
| PHP     | - | PHP Hypertext Preprocessor                                   |
| PEGASIS | - | Power-Efficient GATHERing in Sensor Information Systems      |
| QoS     | - | Quality of Service   |
| RF      | - | Radio Frequency  |
| RBS     | - | Reference Broadcast Synchronization                          |
| RCH     | - | Relaying Cluster Head  |
| RIP     | - | Restricted Isometry Property                                 |
| RCP     | - | Route Construction Packet                                    |
| SPIN    | - | Sensor Protocols for Information via Negotiation             |
| SNR     | - | Signal to Noise Ratio  |
| ST      | - | Soft Threshold   |
| SQL     | - | Structured Query Language                                    |
| TEEN    | - | Threshold sensitive Energy Efficient sensor Network protocol |
| TDMA    | - | Time Division Multiple Access                                |
| TCP     | - | Transport Control Protocol                                   |
| WLAN    | - | Wireless Local Area Network                                  |
| WSN     | - | Wireless Sensor Network                                      |
| WSNs    | - | Wireless Sensor Networks                                     |