EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES

PROBLEM STATEMENT:

- Emerging approaches for early identification of forest fires are needed in the forest DARK FLOWER since it is the only way to minimise damage from such fires.
- We outline the layout of a wireless sensor network for early forest fire detection. We begin by outlining the fundamentals of modelling forest fires in accordance with the Fire Weather Index (FWI) System, one of the most thorough techniques for assessing the threat of forest fires.
- Then, using wireless sensor networks, we describe the problem of forest fire detection as a node k-coverage problem (k 1). In order to approximate the node k-coverage problem, which is demonstrated to be NP-hard, we offer approximation strategies.
- We describe a centralised constant-factor approach and a completely distributed variant that does not require location-aware sensors.
- Our simulation analysis shows that our algorithms can activate nearly the maximum number of sensors, converge considerably more quickly than other algorithms, significantly increase the network lifetime (almost double it), and achieve uneven monitoring of various forest zones.
- Forest fires occur throughout the year, escalating in intensity in the summer and fall. To combat forest fires, various strategies have been used over the years.
- Because a significant amount of gases and particulate matter are released into the sky after each and every forest fire, they are also recognised as a major contributor to air pollution.
- Establishing a network of observation posts is the easiest and most straightforward option, but it is also time-consuming for the people involved.