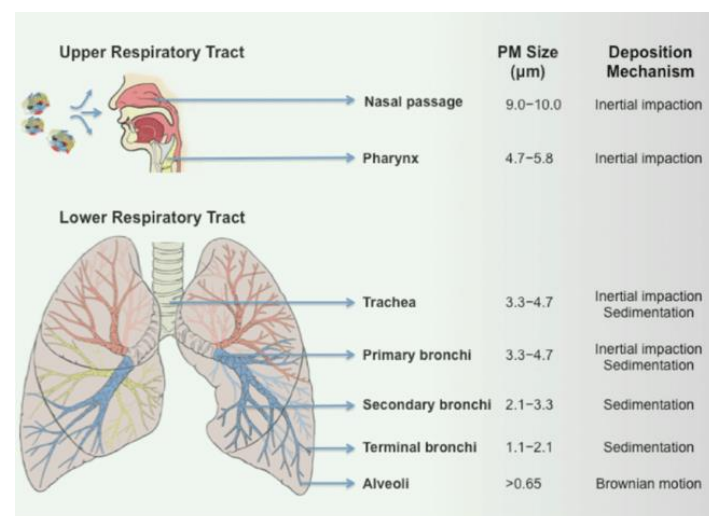
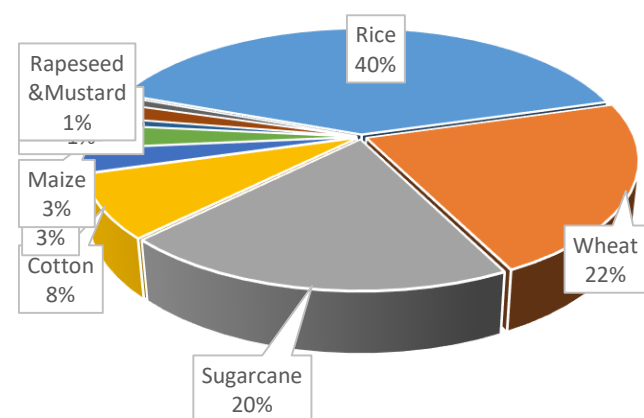


Impact of massive sugarcane residue burning, dispersion, and associated health risk assessment of PM_{2.5} in Mandya District, India

Introduction

- India is the largest sugarcane producing country, generates huge amount of residue.
- Farmers use to burn the residue in rural areas, makes air pollution.



Material & Methodology

- Finding hotspot.
- Co-locating sampling site.
- Ground level monitoring of PM_{2.5}.



Fig : GRIMM PM Sampler

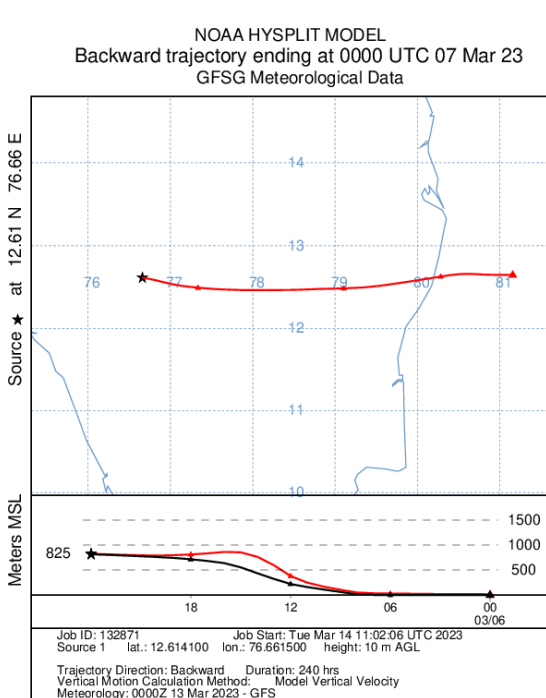
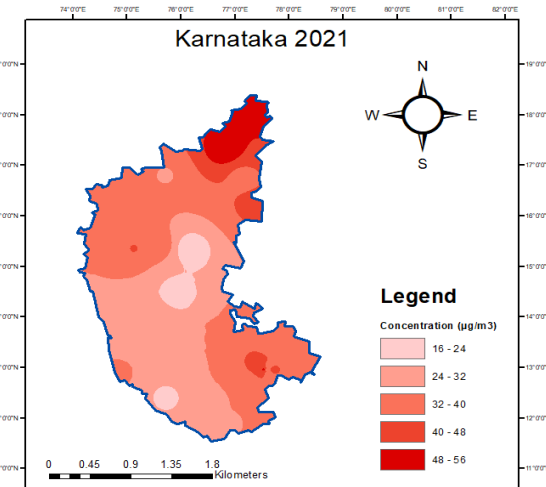


Fig: Hysplit Model output

Das S¹, Nagendra S M S¹

¹ Indian Institute of Technology Madras

- Plume behaviour using CALPUFF Modelling

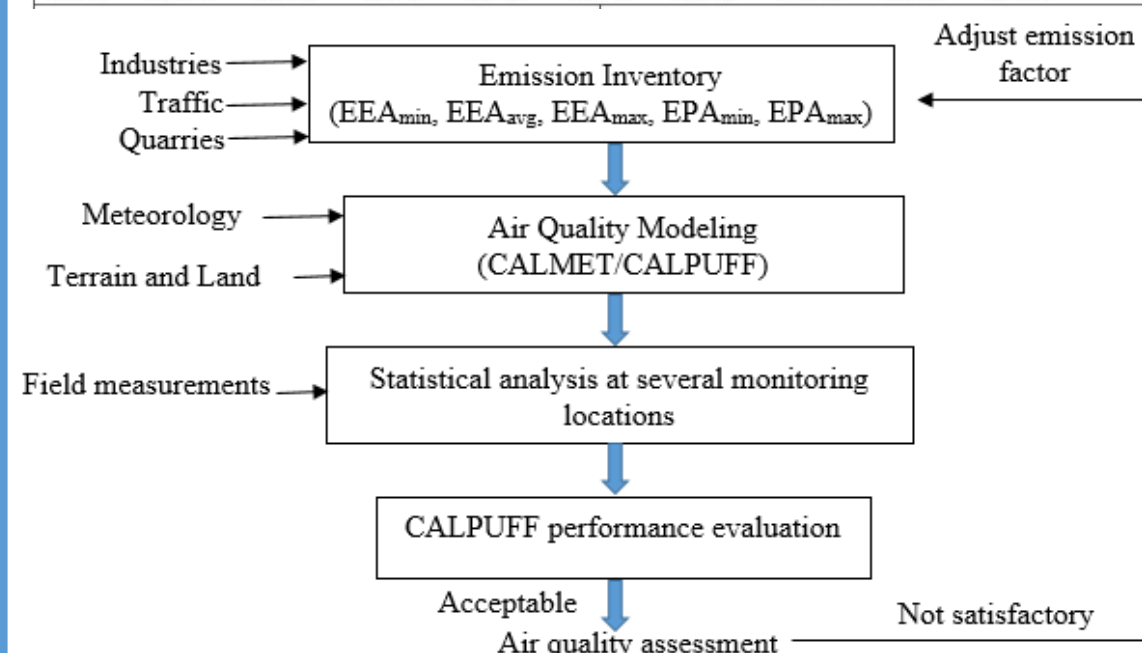
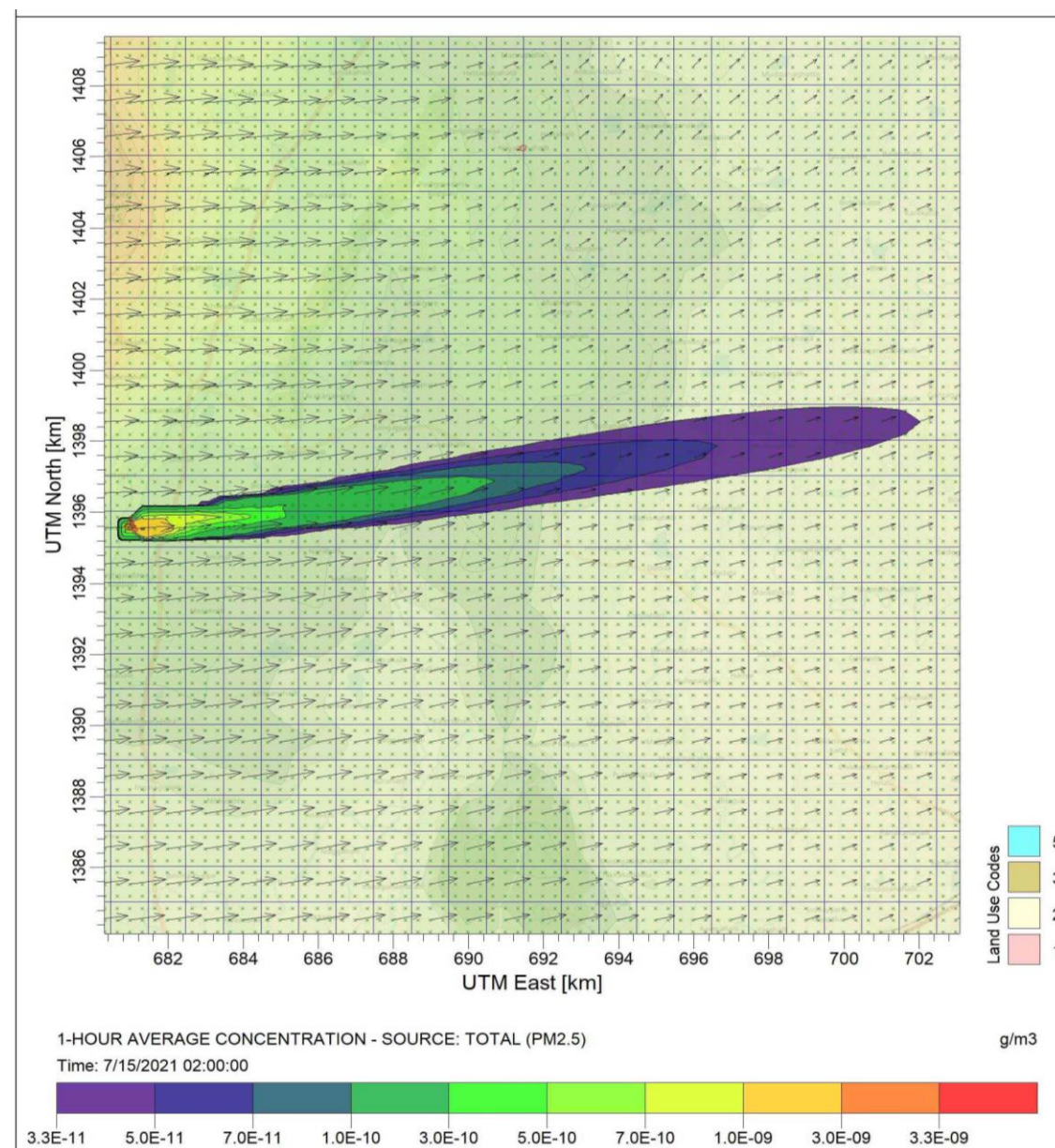
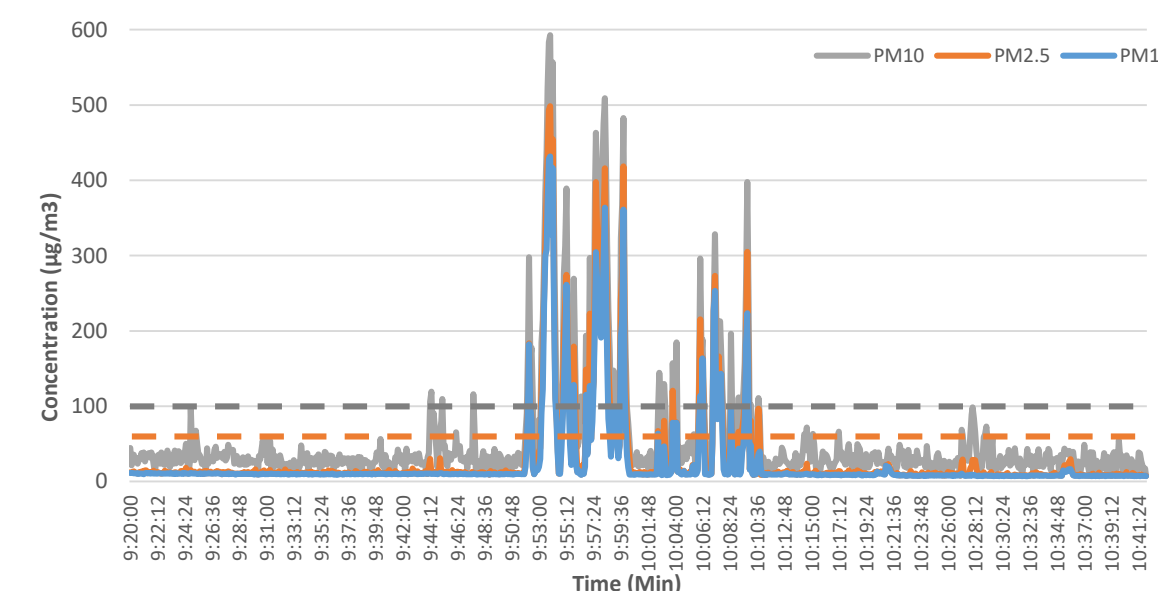


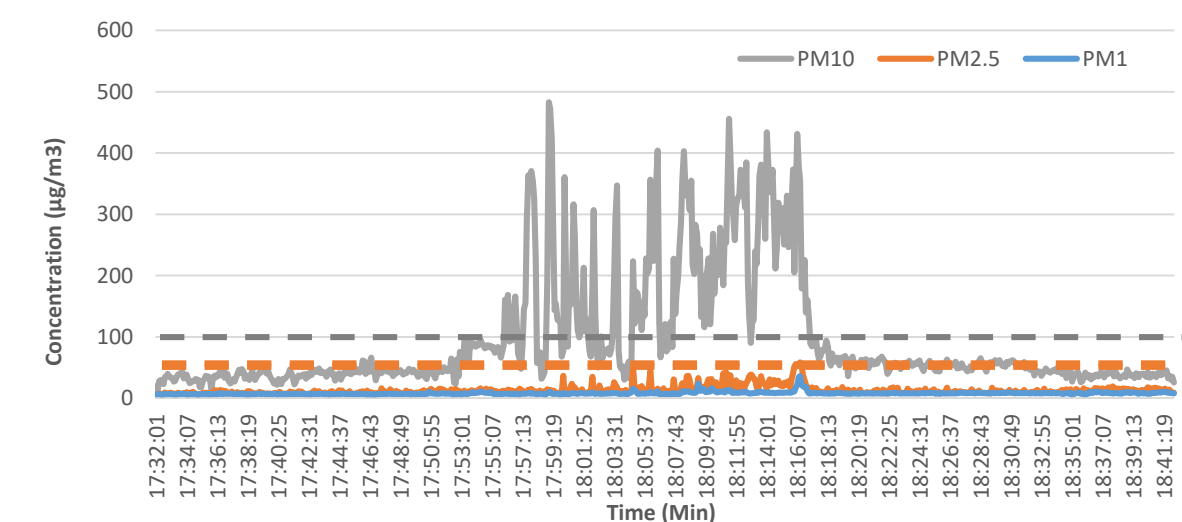
Fig 3: A model simulation framework (Ghannam & El-Fadel, 2013)

Result & Discussion

- PM during morning BB



- PM during evening BB



- PM1, PM2.5, and PM10 has been increased by 66.26 µg/m³, 83.06 µg/m³, and 107.5 µg/m³ respectively.
- Deposition dosages has been calculated using MPPD are 1.68 µg, 2.49 µg, and 4.77 µg.
- Mortality rate has been found 31.13%, 29.94%, 51.56%, 28.47%, and 39.71% respectively due to COPD, IHD, Lung Cancer, Stroke, and other natural diseases.