25th ETH-Conference on Combustion Generated Nanoparticles

Determining the contribution of non-combustion sources by the fine PM source apportionment results in Tehran, Iran
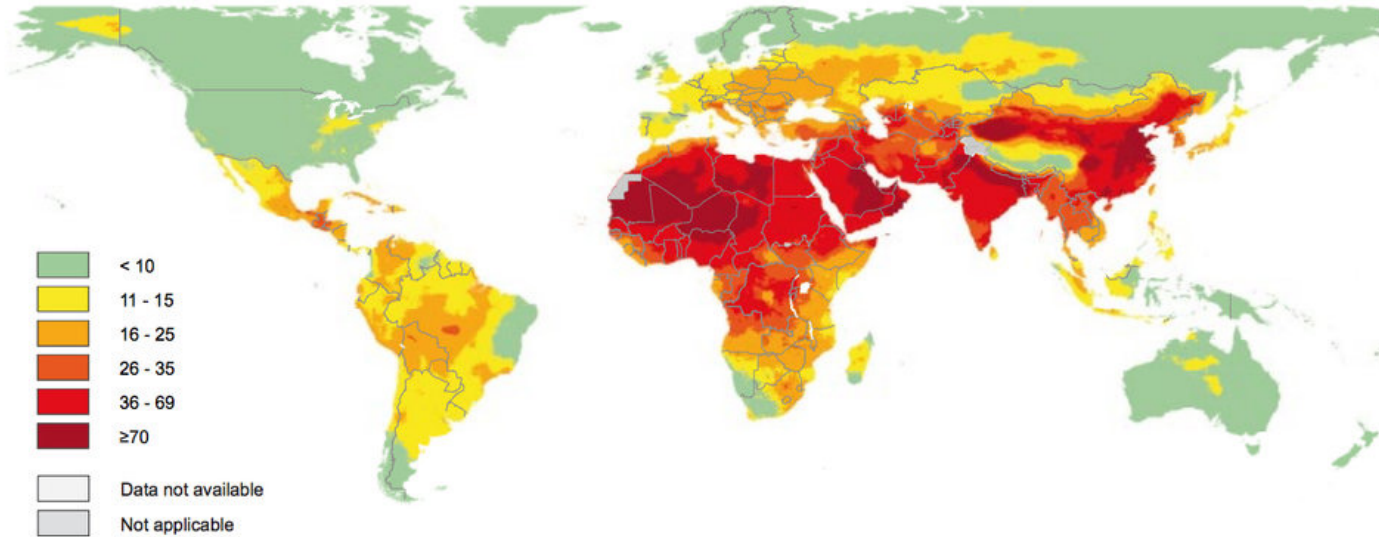
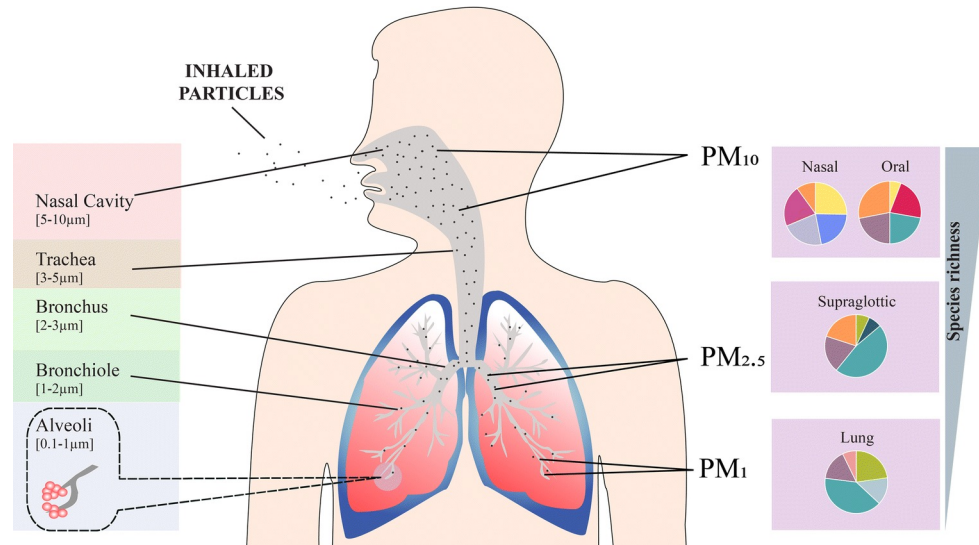Maryam Zare Shahne

June 2022

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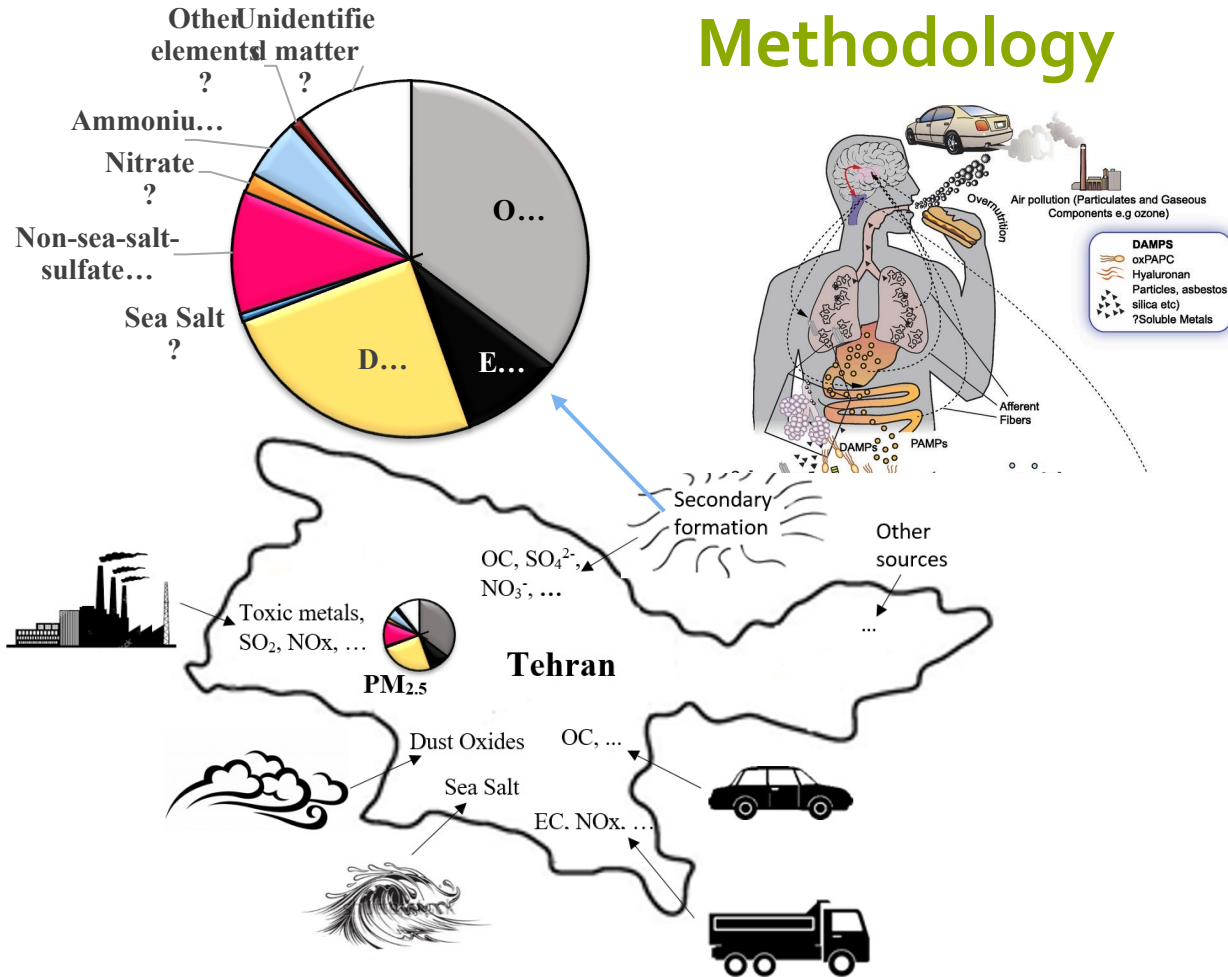
- Conclusion

# Introduction



Legend:
- < 10
- 11 - 15
- 16 - 25
- 26 - 35
- 36 - 69
- ≥70
- Data not available
- Not applicable

# Introduction

# Methodology

# Methodology

# Methodology



PM Sources

(MS) Measured Source source profile

(ES) Extracted source

PCA results

Extracted (ES S) simplex source

Simple factor from PCA

EC S (Extracted complex source

Complex factor from PCA
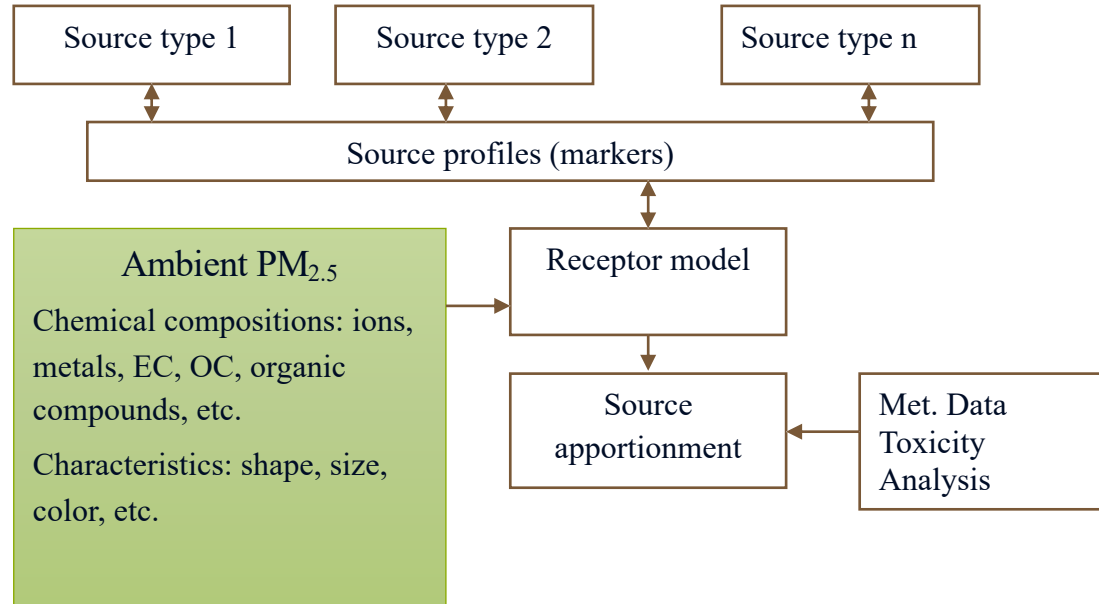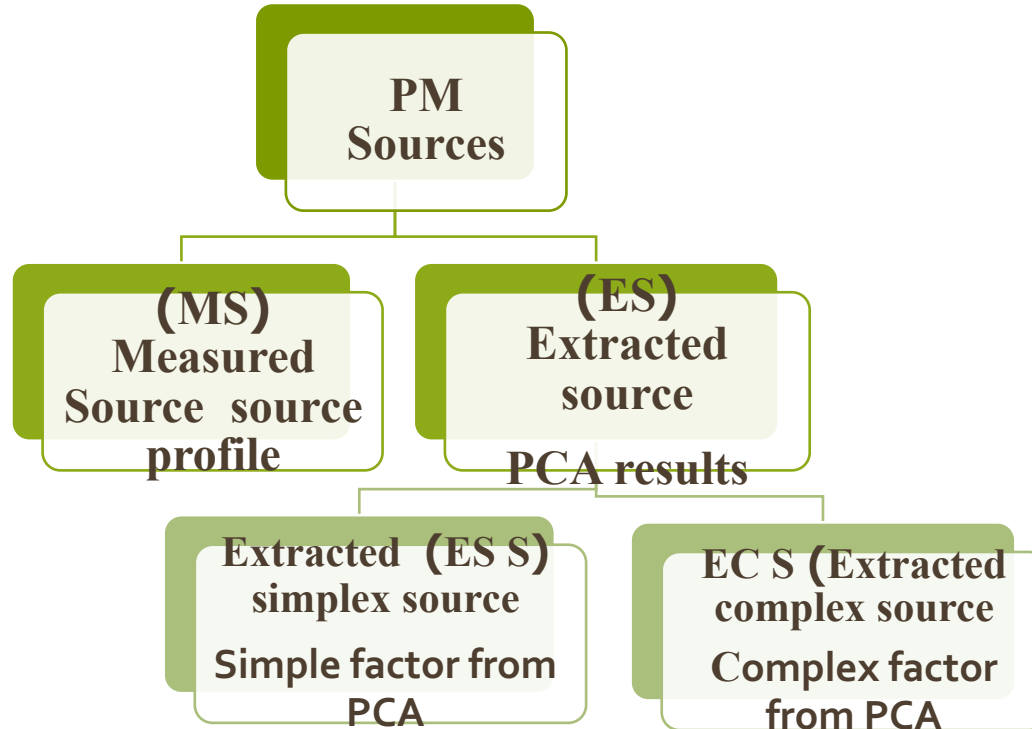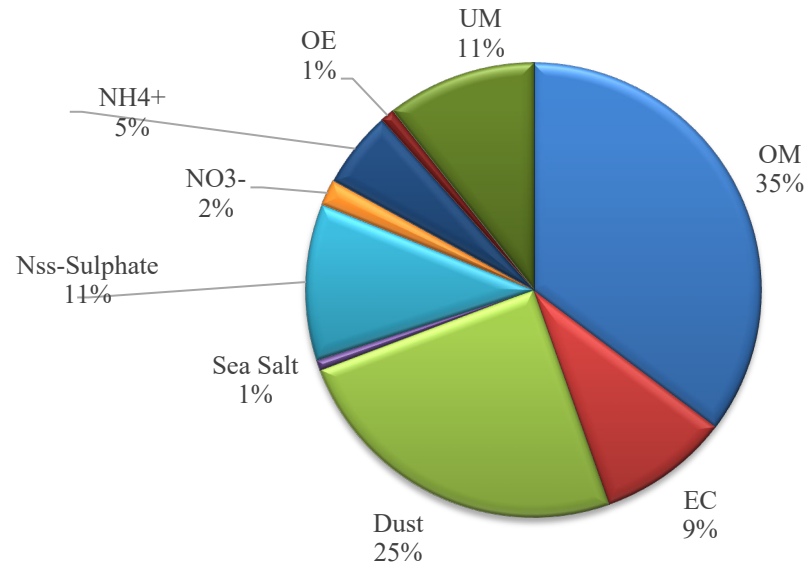
# Results

# Results

| Factor | Variance explained (%) | Determining elements[a,b] | Factor name |
|---|---|---|---|
| 1 | 48 | **Al, Si, Y, La, Eu, Dy, Ho, Sc, Ti, Ce, Pr, Nd, Sm, Yb, Lu, Th, Fe, Co, Mg, U, Nb, Pd, Sr, Rb, P, Cr, Ba,** *Li, Mn*, Cs, W, ws Na, ws Ca, Mo, $SO_4^{2-}$ | Re-suspended soil |
| 2 | 18 | **As, Cd, Rh, Cu, Sn, Pb, Tl,** *Cl, Ni, V, Sb*, Ag, Cs, Zn, W, $NO_3$, $NH_4^+$ | Heavy fuels combustion, metal abrasion and tire wears, lubricating oil and local industries |
| 3 | 7 | **WIOC, $NH_4^+$, ws K, $SO_4^{2-}$, $NO_3^-$**, *WSOC* | Light duty Vehicular sources |
| 4 | 4 | *Pt*, Mo Zn, V, Ni | Local industries |
| 5 | 4 | *EC*, ws Ca, ws Na, Ba, WSOC | Heavy duty vehicles |

Thank you for your attention!

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