

# **DIAGNOSTIC MAPS OF CAPE FROM LAM AND DATA FROM NETWORK OF SYNOPTIC STATIONS**

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# Motivation

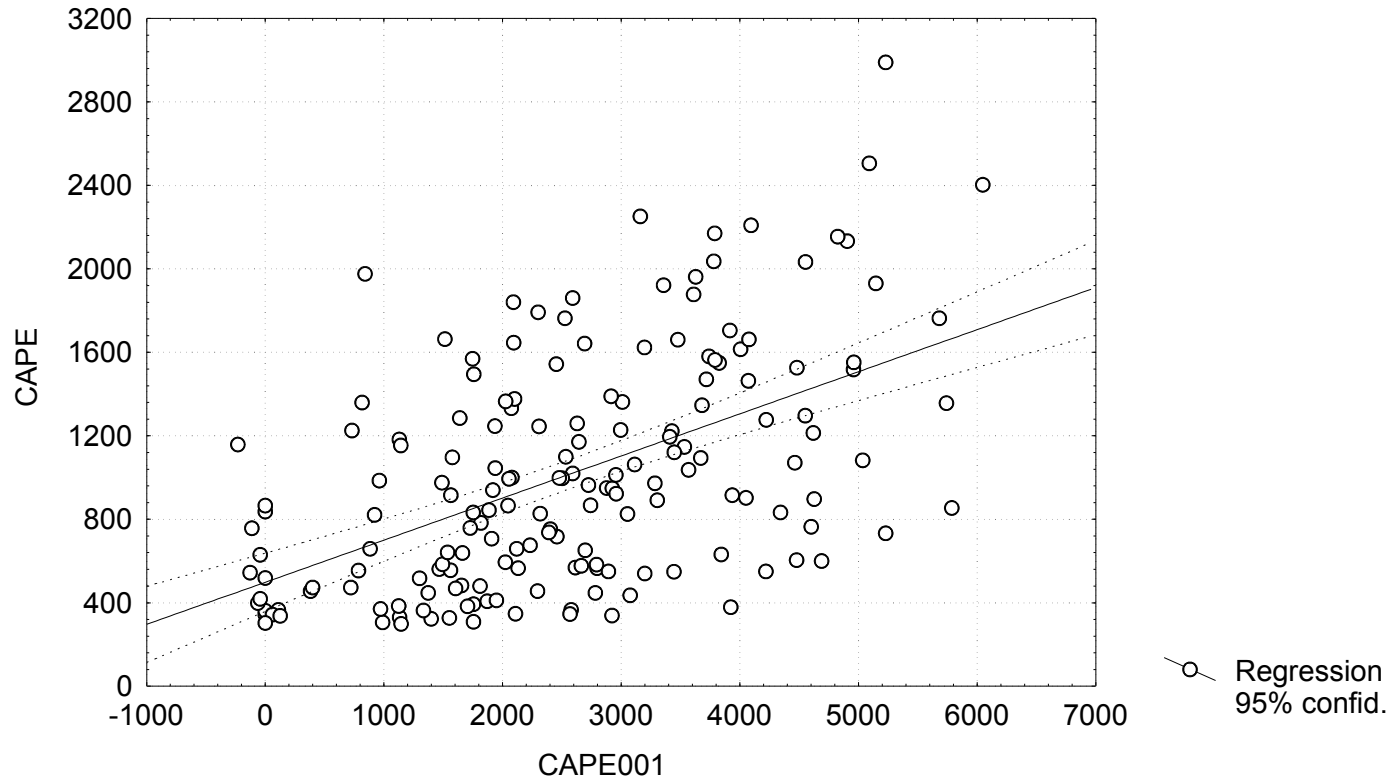
- More accurate severe storms forecasting
- Kopp, F.J., and H.D. Orville, 1994

# Method

- Pseudo-temps
- 2-D cloud model
- Mainly bad results

# Verification of CAPE

CAPE001 vs. CAPE  
CAPE = 498,45 + ,20173 \* CAPE001  
Correlation: r = ,53361



# Correcting pseudo-temps

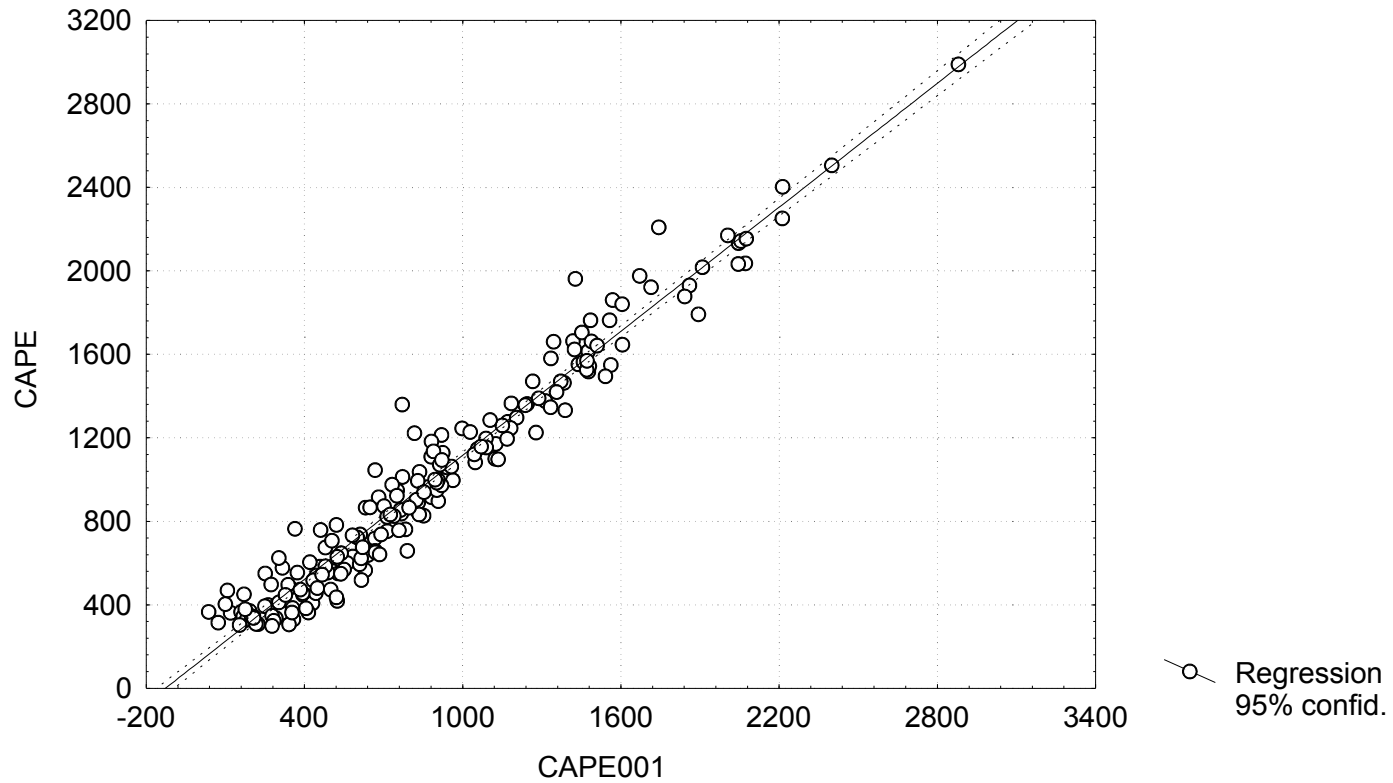
- Data at the first level to the ground are changed with measured data
- CAPE is calculated from the lowest level
- All forecast ranges give the same result

# Verification(1)

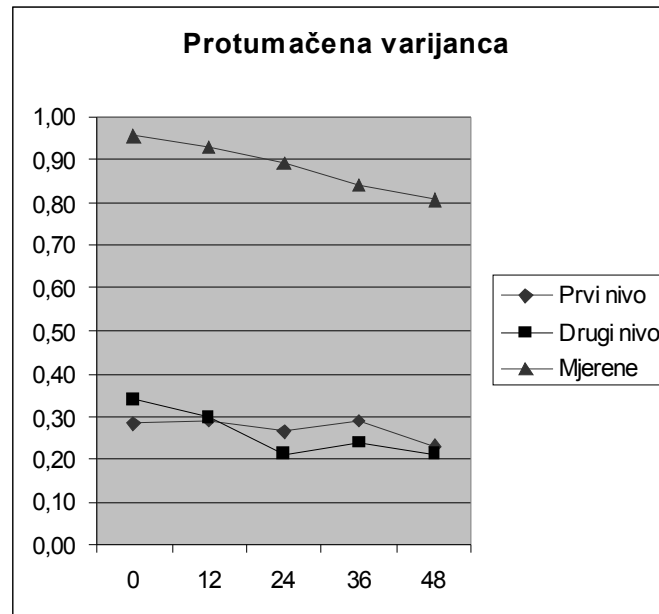
CAPE001 vs. CAPE

$$\text{CAPE} = 125,82 + ,99047 * \text{CAPE001}$$

Correlation:  $r = ,97737$

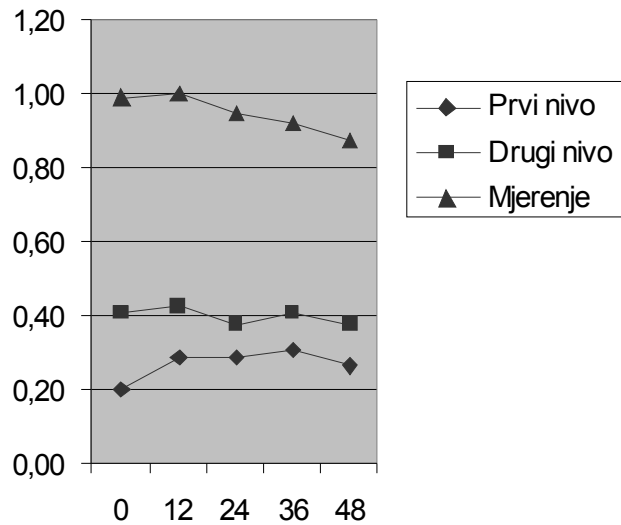


# Verification(2)

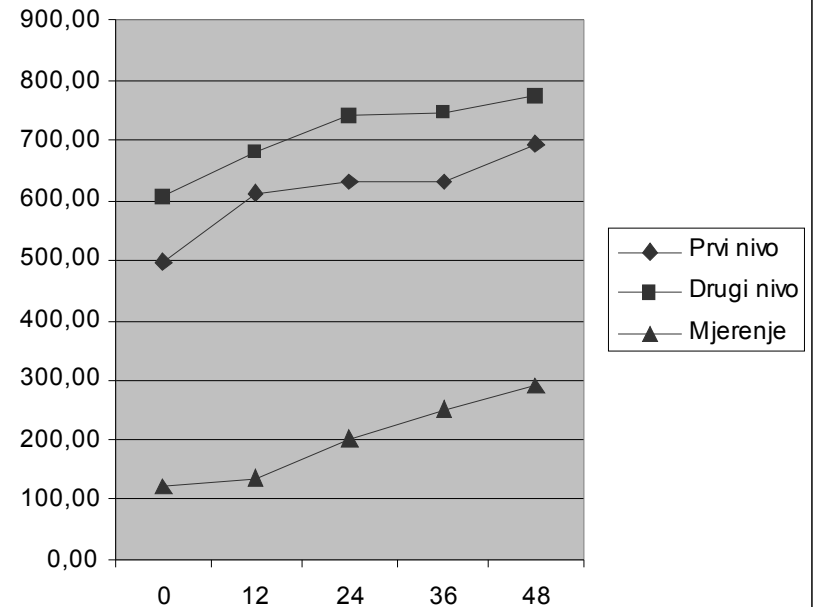


# Verification(3)

### Koeficijent regresije



### Pomak pravca regresije



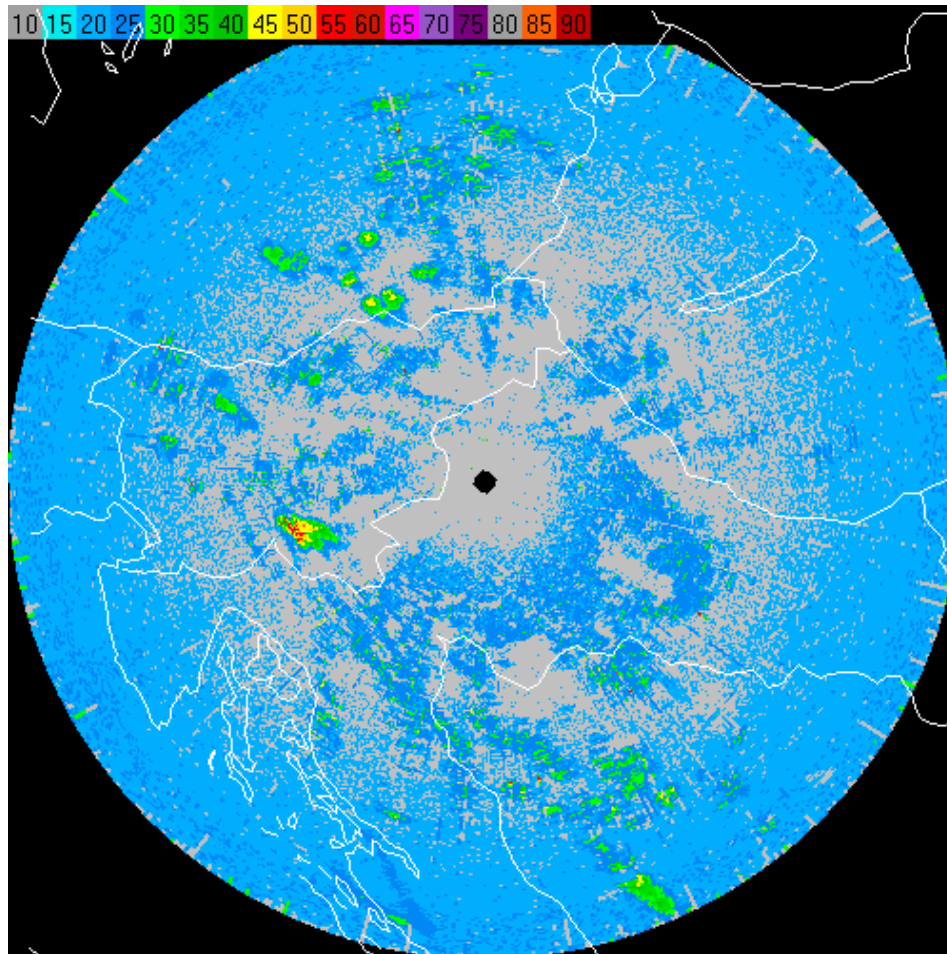


# Corrected CAPE

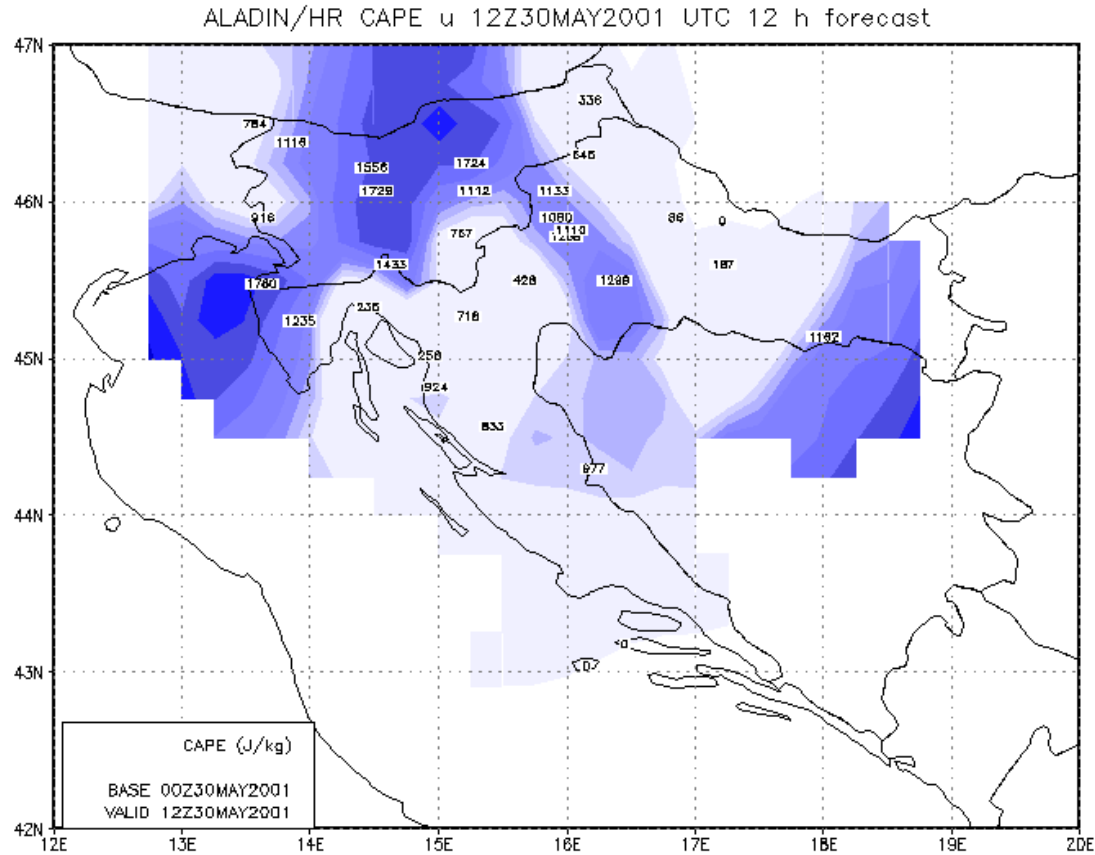
- Pseudo-temp
- SYNOP



# Radar image



# CAPE without correction



# Conclusion

- It is possible to calculate CAPE very accurately using ground level measurements and upper level data from model
- The main source of model CAPE error are errors in temperature and humidity at lowest model levels
- Usage: nowcasting, research and model verification