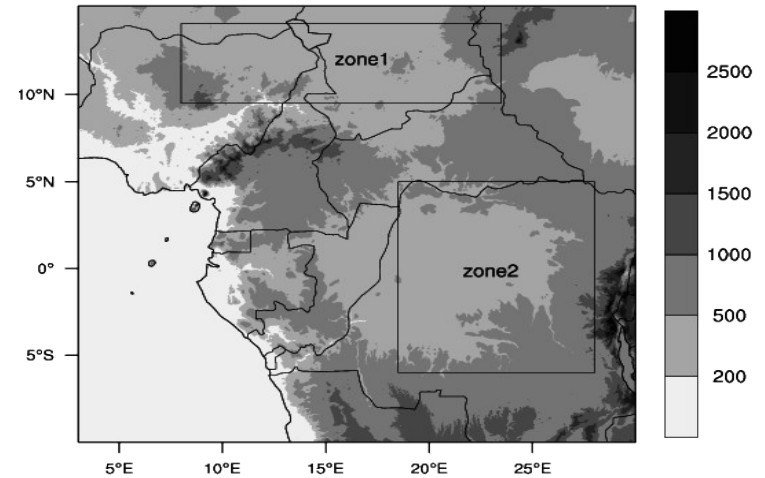


[A.J. Komkoua Mbienda¹\(kombiend@gmail.com\)](mailto:kombiend@gmail.com)

This study is based on the outputs of RegCM4 at 40 km horizontal resolution. Details about RegCM4 configuration made in this study can be seen in Komkoua et al. 2014 [5].

Study period: From Jan 2002 to Dec 2006 preceded by one year of spin-up. For this period, 2 sets of experiments have been conducted: one without aerosols (Exp) and another with aerosols interactive (ExpA). Discrepancies between ExpA and Exp allow us to capture the aerosol impacts.



• **▲ Fig. 1** : Topography (m) of the simulation domain. The two boxes indicate the two sub-regions for which the emphasis of the model results has been done.

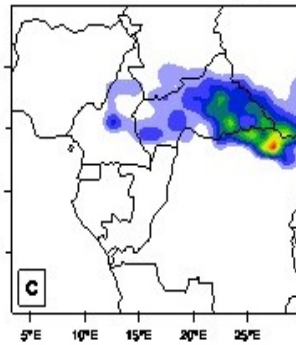
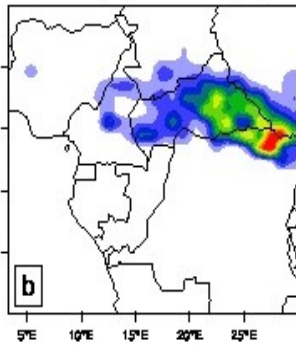
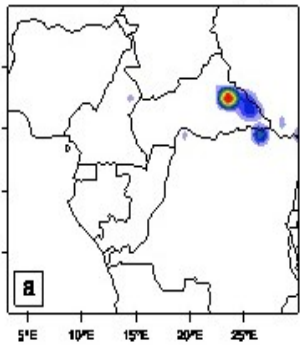
◀ **Fig.2**: Monthly aerosol optical depth (AOD) from January 2002 through December 2006 over (a) zone1, (b) zone2 and (c) the entire domain.

The spatial distribution of anthropogenic aerosols is associated with higher emissions of OC and BC.

SOx anthropogenic emissions (DJF)

BC anthropogenic emissions (DJF)

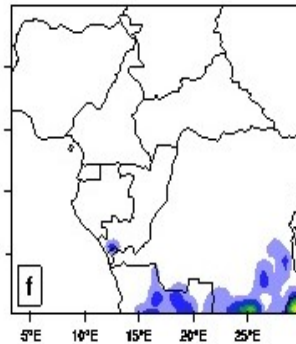
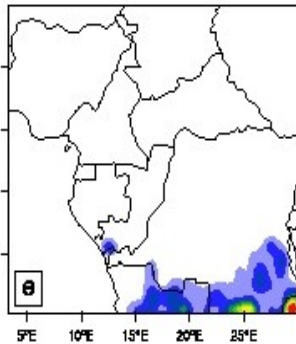
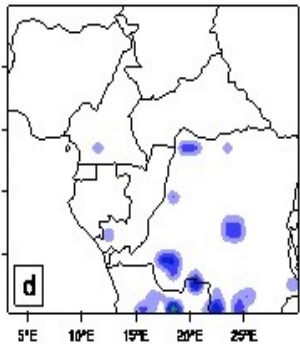
OC anthropogenic emissions (DJF)



SOx anthropogenic emissions (JAS)

BC anthropogenic emissions (JAS)

OC anthropogenic emissions (JAS)



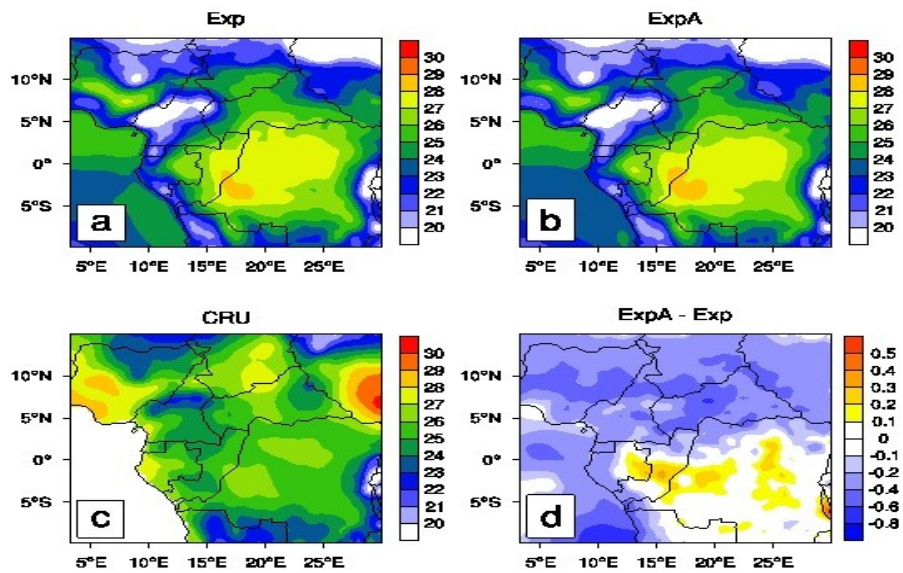


Fig. 3: DJF surface air temperature for (a) Exp, (b) ExpA, (c) CRU and (d) ExpA-Exp.

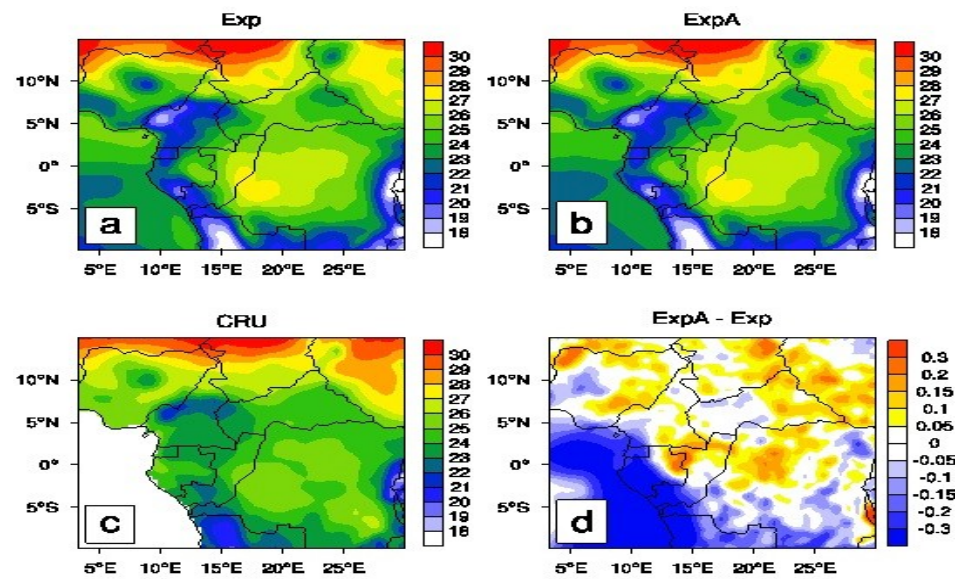


Fig. 4: Same as Fig.3, but for the period JAS.

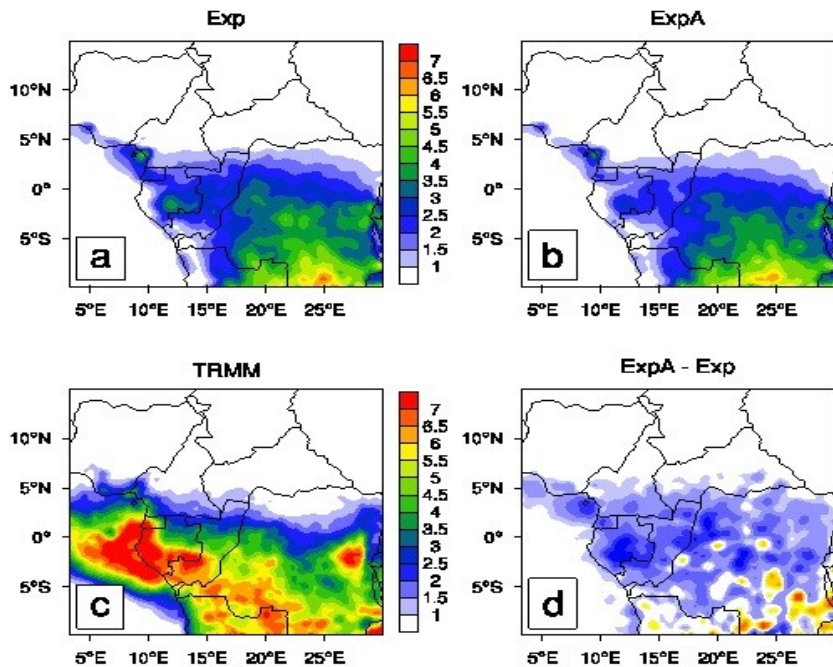


Fig. 5: DJF precipitation (mm/day) for (a) Exp, (b) ExpA, (c) TRMM and (d) ExpA-TRMM.

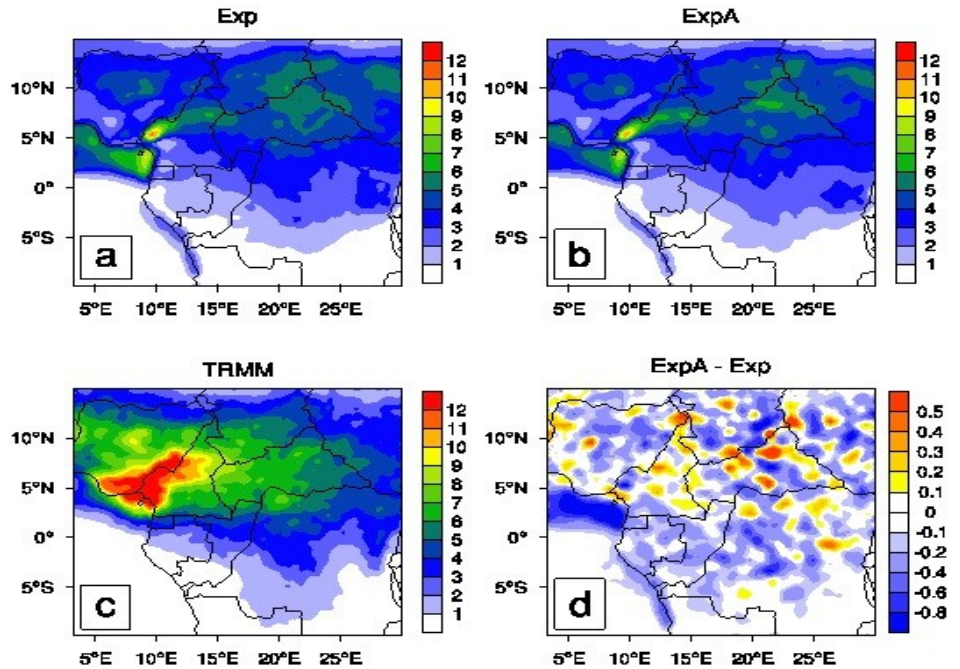


Fig. 6: Same as Fig5, but for JAS