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## Properties of the low ionosphere C-region, using the South America VLF NETwork (SAVNET)

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The South America VLF NETwork (SAVNET) is composed of Very Low Frequency (VLF) tracking receivers located at various sites in the South American territory, including Brazil, Argentina, Peru. SAVNET is fully operational since the early 2008. In this paper we present results related to the formation and long-term behavior of the transient low ionosphere C-region. The C-region is characterized by an additional phase advance ( $\Delta \Phi$ ) just after the sunrise, indicating the lowering of the quiescent ionospheric level down to ~ 65 km, followed by an uplift of the same level up to 70 km.  $\Delta \Phi$  has been monitored over 18 months using the Peruvian and Argentinean SAVNET stations. The results clearly show that its temporal variations include two time scales. A long time scale of the order of months and a shorter time scale of the order of days up to tens of days. These findings will be discussed in terms of the relative position between the VLF great circle propagation path and the terminator, and in terms of temperature fluctuations in the low ionosphere. An implication of these results is the possibility of monitoring the long-term quiescent solar radiation based on a VLF diagnostic of the low ionosphere physical parameters.