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Persistence of low levels of plasma viremia and of the latent reservoir in patients under ART: A fractional order approach

Carla M A Pinto

Polytechnic of Porto, Portugal

Low levels of viral load are found in HIV infected patients, after many years under successful suppressive anti-retroviral therapy (ART). The factors leading to this persistence are still under debate but it is now more or less accepted that the latent reservoir may be crucial to the maintenance of this residual viremia. In this talk, we focus on the role of the latent reservoir in the persistence of the latent reservoir and of the plasma viremia in a fractional order (FO) model for HIV infection. The proposed model provides new insights on the role of the latent reservoir in the persistence of the latent reservoir and of the plasma virus. To our best knowledge, this is the first FO model that deals with the role of the latent reservoir in the persistence of low levels of viremia and of the latent reservoir.

Biography

Carla M A Pinto is an Adjunct Professor at School of Engineering, Polytechnic of Porto, since December 1997. She is a Researcher at Center for Mathematics of the University of Porto, since 2003. She has completed her PhD degree in Mathematics in 2004. Her current research fields involve the study of epidemiological models for several diseases, namely HIV/AIDS, tuberculosis, malaria, amongst others. She also studies coupled nonlinear dynamical systems, considering fractional and integer derivatives using bifurcation theory and symmetry techniques. She has authored/co-authored a large number of research papers, published in reputed international journals and international conferences. She has been serving as an Editorial Board Member of several journals. She is the Sub-Director of the Department of Mathematics since 2012.

cpinto@fc.up.pt

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