Perspectives in FDEs

- Application of Lie group methods and invariant subspace method to find explicit solutions for nonlinear FDEs (**Ref:** Gazizov and Kasatkin, Computers and Mathematics with Applications, 2013; Leo, Sicuro and Tempesta, Comptes Rendus Mathematique, 2014)
- Fractional moving boundary problems. Applications of space and time-fractional Stefan problems in physics (**Ref:** Roscani, Tarzia, *arXiv* : 1405.5928, 2014; Voller, Falcini, Garra, Physical Review E, 2013)
- Applications of fractional Bloch-Torrey equations in NMR. Recent experimental validation of fractional diffusions in porous media and biological tissues (**Ref:** Magin, Feng, Baleanu, Magn. Reson. Engr, 2009 GadElkarim et al., IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2014)

Perspectives in FDEs

- Analysis and applications of FDEs involving fractional power of hyper-Bessel-type operators or fractional operators with varying coefficients. For example applications to fractional Euler-Poisson-Darboux equation, fractional cylindrical diffusions and fractional Bessel equations
  (**Ref:** McBride, Proc. Lond. Math. Soc., 1982; Garra, Orsingher, Polito, Journal of Statistical Physics, 2014)
- Applications of fractional vector calculus in mathematical physics and probability, in particular in fluid mechanics
  (**Ref:** Meerschaert et al., Physica A, 2006; D'Ovidio, Garra, Electronic Journal of Probability, 2014)

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