

Turkish Journal of Electrical Engineering & Computer Sciences

Turkish Journal

of

Performance of Prefiltered Model-Based Frequency Estimators

Electrical Engineering &
Computer Sciences

Mustafa A. Altinkaya, Bülent Sankur, Emin Anarım
Boğaziçi University, Department of Electrical and Electronics
Engineering 80815, Bebek, Istanbul - TURKEY
e-mail:{altink, anarim @ busim.ee.boun.edu.tr,
sankur@boun.edu.tr

Phone: +90(212) 2631540, ext.(1414),

Fax: +90(212) 2872465

 [Keywords](#)
 [Authors](#)



elektrik@tubitak.gov.tr

[Scientific Journals Home Page](#)

Abstract: In this work, the performance improvement due to prefiltering of inputs in model-based frequency estimators is investigated based on simulation experiments. Initial estimates on the tone frequency locations, which are obtained via DFT peak picking type preanalysis, are used to design a prefilter to remove noise and interference. The simulations indicate that prefiltering can improve the accuracy of Pisarenko and AR frequency estimators and MUSIC and KT frequency estimators with low subspace order significantly. The SNR thresholds of model-based frequency estimators are lowered by prefiltering. Additionally, interesting trade-offs between prefiltering gain and the gain due to subspace noise filtering have been investigated.

Key Words: Frequency estimation, parametric estimation, model-based estimation

Turk. J. Elec. Eng. & Comp. Sci., 6, (1998), 23-36.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Elec. Eng. & Comp. Sci.,vol.6,iss.1.](#)