Hello, my fellow workers. Today I am going to talk about the best book. The title of the book is Handbook of medical imaging. The authors of the book are Jacob Beutel , J. Michael Fitzpatrick (Vanderbilt University), Steven C. Horii (University of Pennsylvania Health Systems), Yongmin Kim (University of Washington), Harold L. Kundel (University of Pennsylvania Health Systems), Milan Sonka (University of Iowa), Richard L. Van Metter (Eastman Kodak Company). The book is published by Spie Press in 2000.

The book consists of two parts and twenty chapters. I want to abstract one section from the second chapter. The title of this section is **linear-systems theory**. The main idea of the section is to show a description of important principles and relationships required to characterize system performance

in the spatial-frequency domain.

The authors explain us that the first step in any analysis is to ensure the system under study is indeed linear. Essentially, this means the output must be proportional to the input.

In the first subsection, it is spoken in details about *Impulse-response function.* When a linear system is presented with the input delta-func, the corresponding output will be func from delta-func which is called the impulse-response function. It is specially noted that there is no requirement that the IRF be isotropic

In the second part mention was made of ***Linear and shift-invariant (LSI) systems***, because a system must also have a shift-invariant (isoplanatic) response before a Fourier-based analysis can be used. Special attention was paid to the detail In practice, analysis of systems that are not shift invariant, such as image-intensifier based systems, may be restricted to a central region where the response is approximately shift invariant.

In conclusion, the book is well illustrated with diagrams and formulas. The information of the book may be recommended to specialists in medical physics.

The information of the article is useful for my work.