sation precession by an external microwave field [14]. For the remainder of this paper, we refer to films satisfying this condition as 'SSDF' (an acronym for 'sub-skin depth films'). We present additional considerations related to this skin depth in the Conclusions, with particular reference to Almeida's approach for dipolar spinwaves [16].

We note that strong microwave screening effects were predicted for thin films related to the phase of reflection of the microwave field from the film surface. The theory was constructed for a particular case of ferromagnetic resonance driven by very wide microstrip transducers ($k_{max} = 0$). One may suppose that similar effects should have been noticed in the travelling wave experiments as well. In the following we show that it is actually not the case, and the broadband microstrip FMR represents a unique tool to observe these effects.

The microwave magnetic field outside the film is described by Eq.(2) with a vanishing right-hand part and $\sigma = 0$. This field is a combination of the microwave field from the transducer and the dynamic magnetic field from the film. Solving this equation outside the film, and applying the usual electromagnetic boundary conditions, one arrives at conditions for the fields at the film surfaces involving dynamic quantities *inside* the film only. The conditions at the film surface $y = L$ (not facing the microwave flux from the transducer) are:

$$ke_{zk} + i\omega \frac{\mid k \mid}{k} h_{xk} = 0. \tag{3}$$

For the film surface facing the microwave flux $y = 0$, the condition is:

$$ke_{zk} - i\omega \frac{\mid k \mid}{k} h_{xk} = i\omega h_k^{(0)}, \tag{4}$$

where $h_k^{(0)}$ is some quantity proportional to the stripline transducer field $\mathbf{h}_{ek}$.

From (3) and (4) it follows that for $k = 0$ the field $h_{xk}(y = 0) = const \neq 0$, but $h_{xk}(y = L) = 0$. This means that a very efficient shielding by microwave eddy currents takes place for SSDF films[14]. For $k \neq 0$ the shielding is not perfect and one can expect a significant microwave magnetic field at the rear film boundary.

The effects of conductivity have been previously considered also by Almeida and Mills [16] in the limit of exchange free, dipolar spin waves and $L >> l_{sm}$. Based on Eqs.(3-4) we extended this theory on smaller L-values. Results from a calculation using the extended theory are shown in Fig. 2. The value at the rear film boundary is shown as $h_{xk}(y = L)/h_{xk}(y = 0)$ vs. k in Fig.(2b). From this figure one finds that the efficient shielding disappears at a k-value k_s about 200 rad/cm (seen as $h_{xk}(y = L)/h_{xk}(y = 0) = 0.65$ for this