

is observed at which the maximum IP effect occurs. Frequencies above and below this band show a *reduced* effect. This "*peak frequency*" can be an important factor in whether the source material is seen clearly or not. The wholly electrically discontinuous disseminated deposits such as porphyry coppers have peak frequencies of 6Hz - 40Hz while massive electrically continuous coarse grained deposits occur low in the spectrum (less than 0.1Hz to 1Hz).

Much has to be learnt about this phenomenon (which is of course equivalent to decay form information), but it does indicate that the effective frequencies at which any IP (EIP or MIP) is carried out is important.

*Other Significant Points:-*

- 1 - The above remarks refer to time domain. However, measurements made in terms of frequency effect and phase angle in the frequency domain, show precisely the same phenomenon. There are distinct advantages in the application of MIP in the frequency domain, in particular the signal to noise ratio for a given transmitter is significantly greater with frequency. A disadvantage is that the effective "multi-frequency" approach of observing the decay form cannot be obtained without repeating the work at various frequencies.
- 2 - In several unique circumstances the method has vast superiority over other electrical methods. Firstly, in areas where the external (positive) current flow from the IP source cannot reach the surface either because of dessicated desert sands and/or due to a complete shorting out of the return signal at the base of a salt lake. Other cases where MIP is a unique solution is where chargeable material (even when weakly so) such as heavy minerals occur in barren quartz sands. In such circumstances EIP techniques