trum of the pairing glue will undoubtedly be forthcoming. Inelastic scattering in the normal state to indicate the variation of the spectra with (q, ω) to see whether the bulk of it has very slow q-dependence and a high energy cut-off as well as ω/T scaling would be especially helpful.

On the theoretical issues, several models were proposed which are misguided multi-orbital generalizations of models for Cuprates. The opinion is converging to models similar to those with Hund's rule couplings and local repulsions of magnitude similar to the band-width. This is the class of models relevant to itinerant magnetism [96] in metals like Ni or Fe. For such models, spin-polarized variational band-structure models give the right values for ground state magnetization and fermi-surfaces. Solution of such models for their fluctuation spectra is quite another matter. The physics of itinerant ant-iferromagnetism and ferromagnetism in such situation are not fermi-surface effects, the spin-gaps are more than an order of magnitude larger than the transition temperatures and essentially the entire band is affected. Possible large spin-gaps in the AFM pncitides should be looked for in spin-polarized photoemission. This always means that critical modes are soft over a large range in q-space leading to small intrinsic correlation lengths and huge reductions of transition temperatures due to the large entropy of the collective modes. There are no really good theories of this even for the classical fluctuations above finite temperature phase transitions. How this goes over to zero-temperature transitions where the soft modes may become scale-invariant over the entire momentum range is a marvelous unsolved question. Understanding of such quantum-criticality may be the key to understanding superconductivity in such systems.

F. The case of $Ba_{1-x}K_xBiO_3$

I wish to single out the special case of $Ba_{1-x}K_xBiO_3$ (and $BaBi_{1-x}Pb_xO_3$) because they have s-wave superconductivity which is most likely driven by e-e processes. This as explained below may be the key to superconductivity with much higher transition temperatures.

As seen in fig. (1), the T_c of $Ba_{1-x}K_xBiO_3$ is an order of magnitude larger than that of other metals of similar low electronic density of states at the chemical potential. It was suggested [97] that the superconductivity could not be due primarily to electron-phonon interactions and some detailed calculations [98] support this. Bi is one of about a dozen