## Novel Non-Contact Measurement of the Specific Heat of Insulating Glasses at Low Temperatures

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Parasitic heat inputs through wires are a general problem in measurements at low and ultra-low temperatures. To avoid such unwanted effects new contact-free techniques for investigating the thermal properties of glasses have been developed in recent years. Particularly challenging in this respect is the measurement of the specific heat of dielectric glasses at temperatures below about 25 mK. With a new technique based on the amplitude of coherent polarisation echoes as intrinsic temperature information and an optical heating method we hope to extend the temperature range, in which the specific heat of glasses can be measured reliably, to well below 10 mK. In this experiment the glass sample is located in a microwave cavity attached to the mixing chamber of a dilution refrigerator and is heated via an optical fibre by a pulsed LED mounted at the 1K pot. The properties of glasses at such temperatures are governed by atomic tunnelling systems. These degrees of freedom allow for the generation of polarisation echoes whose temperature dependent amplitude is used as a thermometer in the specific heat experiments. First heating sequences have been recorded using a BK7 glass as sample. We discuss this new technique and preliminary results obtained with it.