**Supplementary Material**

**Identification of the inflection point of the quasi-diffusion characteristic equation**

A functional form is derived that can be used to identify the -value of the IP in the logarithm of the quasi-diffusion signal attenuation. All differentiation of the logarithm of the quasi-diffusion characteristic equation is performed with respect to . To derive the first and second derivatives of,

with respect to we initially substitute, into Eq.A1 to give,

The chain rule for three nested functions is used to obtain the first derivative of Eq.A2 with respect to and states that,

where in this case,

The derivative of with respect to is,

with the derivative of with respect to given by Eq.9 as,

and the derivative of with respect to given by,

Substitution of Eqs. A7, A8 and A9 into Eq.A3 gives,

and after substitution for the first derivative of Eq.A1 with respect to is obtained,

The chain rule for two nested functions and the quotient rule are used to obtain the second derivative of Eq.A1 with respect to Initially the chain rule is applied separately to the numerator and denominator of Eq.A10. For the numerator of Eq.A10 we have,

with the nested functions given by,

The derivative of Eq.A13 with respect to is performed using Eq.A9,

and the derivative of with respect to is given by Eq.A9. The chain rule then gives,

A similar method is used to obtain the derivative of the denominator of Eq.A10 such that,

and,

The quotient rule is used to obtain the second derivative of Eq.A1 with respect to . The quotient rule states that for a function where and are differentiable and then,

In our case, is given by Eq.A10. By substituting Eqs. A12, A16, A17 and A18 into Eq.A19, the second derivative of Eq.A1 with respect to is obtained,

and after substitution for we have,

The inflection point occurs when,

and satisfies the following equation,