Subject: Re: CLMASS
From: Paul Nulsen <pnulsen@head.cfa.harvard.edu>
Date: Wed, 15 Sep 2010 10:41:33 -0400
To: cavagnolo@oca.eu

Hi Ken,

Clmass remains a work in progress, having sprouted some offspring, although I really hope to post it soon. There are now clmass, monomass (monotonic clmass) and nfwmass (no prize for guessing) in the package, but I have not quite completed the supporting code. It is quite usable for clmass and monomass (another NFW model is needed to make it easier to compute NFW mass confidence ranges).

Here is what I have. See the file USING for incomplete instructions. Ask me about other stuff.

Two warnings: 1. There are exponentials in the code, so if you start with wild parameters, the models will blow up. It is not hard to get reasonable starting values (on the to do list for the xspec models). 2. Xspec has trouble finding the true best fit when there are many parameters (especially as there is quite a bit of degeneracy among the density params), so you need to give it a good poke before you accept the best fit. In fact, trying to find mass confidence ranges will frequently turn up a better fit.

BTW, I would recommend using monomass over the more general clmass model. The nfwmass model works well, but the support is thin. A good way to use the models is to fit the NFW first (see fitcycle.xcm for hints), use its params to get initial densities for monomass, then use the monomass densities to start clmass (there is sherpa code for this, but that is missing other support).

Regards
Paul

Kenneth Cavagnolo wrote:

> Hi Paul,
>
> I've cleared my desk of some work and have just re-read your paper about mass modeling using CLMASS. Is this model available online somewhere (my apologies if I missed a note in the text)? I am a small part of a project headed by Rachel Mandelbaum, and am supplying her with X-ray determined cluster masses. The more metrics we have the better, so I am hoping to use your model and compare with my existing results.
>
> Cheers,
> Ken

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