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Recommendation letter for Xavier Gnata

The CRAL-Observatoire de Lyon is a very active member of one of the two consortia working on the ESA-funded project of a near-infrared spectrograph (NIRSpec) for the future James Webb Space Telescope. During phase A, it was progressively realized that an end-to-end simulation of the instrument was critically needed to address many important issues like deriving an realistic estimate of the performances of such an instrument.

In fall 2002, we selected Xavier Gnata, who was starting his third (and last) year at the "Ecole Nationale Superieure de Physique de Marseille", to work in our team at the CRAL and during 6 months on the development of this end-to-end simulator of NIRSpec as part of his last year practical.

He started at CRAL in March. His work included many different aspects:

- developing and validating a library of Fourier optic modules in C (with the goal of having this library available not only for the NIRSpec project but also for other instruments)
- use the ZEMAX optical design and analysis software to generate the phase masks reproducing the optical aberrations of the telescope and instrument
- develop and validate the I/O routines allowing to link the output of the ZEMAX software with the C libraries of the model
- run the model and analyze and estimate the light losses occurring at several critical points in the system

Despite the large number of very different skills that this project demanded, he was able to start actual work extremely quickly and he progressed at a very good pace. He also integrated very easily in our team and I consider him as one of the best students I ever had. He is planning to start a PhD in 2004 and we hope to be able to have him at the CRAL – Observatoire de Lyon where he could continue his work and extend it to other instrumental projects we have (e.g. the MUSE VLT-second-generation instrument).

If you need any additional piece of information, feel free to contact me.

Best regards,
Pierre Ferruit