We are very happy with the positive comments. We were able to address all issues that were identified by the reviewers.

We now provide context on memory-related optimizations, while referring to the large body of research that was done in this area (Section 5.2.1).

In addition, we added a section on the programmability of the many-core platforms (Section 7).

We also open-sourced the code for the correlator on all platforms. We will make example code available on the web.

Detailed comments are below.

reviewer 1

> Well balanced paper over an attractive driver to discuss application
> of multi-core architectures in signal processing application. I liked
> the tutorial style that fits the magazine targets combined to the
> strong coverage of the paper: although a single kernel is considered,
> all kind of multicore targets are covered (cell, GPU, Intel
> i7). Comparison to super-computer architectures (BG/P) is unique
> information (to the best of my knowledge). What I miss most,
> especially considering it is a magazine paper, is stronger
> state-of-the-art analysis. The paper development points to the memory
> access bottleneck, which is exacerbated with multi-core architecture
> or GPU. It exists a whole body of research in this domain which is not
> referenced and that the authors even try to "reinvent". This shall be
> improved for full acceptance

By no means did we intend to claim that we developed new memory optimization techniques, not did we try to reinvent them. Our aim was to simply describe techniques we used for optimizing algorithms on many core hardware, and we introduced the terminology as it is used in the GPGPU field (e.g. "coalescing"). We now clearly state this in the paper.

However, we certainly agree that it is a very good idea to provide more context on memory-related optimizations, and refer to the large body of research that was already done in this area. We added a complete new section, Section 5.2.1 about this.

reviewer 2

> A very well organized paper that leads the reader nicely to the
> conclusions. The only thing that I am left wondering about is the
> total cost and power that the example system (LOFAR) would require if
> implemented with the five types of hardware listed but this is not the
> stated purpose of the paper so can be left out (or put into a future
> paper).

We agree that this is valuable knowledge, and are indeed working on this for a future paper.

> Minor Revisions: 1. First line of abstract ia a bit awkward
> and 'consist' instead of 'consists' - perhaps "Radio telescopes
> typically consist of multiple receivers whose signals are
> cross-correlated to filter out noise."

Fixed.

> 2. Page 2, column 2, 3rd of way down – change the number 44.000 to
> 44000 with no period or comma to prevent confusion for non-European
> readers.

Fixed.

> Page 3, column 1 – I think the real reason for more bits is to help
> mitigate the impact of strong Radio Frequency Interference (RFI) as
> opposed to more accuracy (unless the SNR is too large at high
> frequency resolution - check).

The reviewer is correct. The reason for having more bits it to
mitigate the impact of strong Radio Frequency Interference.
We corrected this in the text.

> Page 3, column 1, last line – remove ‘of’ to give ‘less instructions’.

Fixed.

> Page 4, column 1, 1st line – ‘The most high end’ => ‘The highest
> performance’.

Fixed.

> Page 5, column2, line 8 should read ‘assumes a complete overlap of
> communication and computation’

Fixed.

> Page 5, column 2, near end of 2nd paragraph – should read ‘by
> computing the AI for the full system’

Fixed.

> Page 6, column 1, near end of 6.1 – ‘tile’ is used with no
> explanation. Perhaps put ‘such as the red area in Figure 4’ in
> brackets.

Fixed.

> Page 7, column 2, before and after the 6.3 title the term ‘cell blade’
> and ‘QS21 blade’ are used without any prior explanation.
> Perhaps just mention testing two of the chips together without any
> mention of ‘blade’.

Fixed, we now correctly introduce the term QS21 blade first.

> Page 8, column 2, reference [4] – all of the words in the title of the
> book except ‘to’ should be capitalized.

Fixed.