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Interactive comment on "First ice thickness measurements in Tierra del Fuego at Glacier Schiaparelli, Chile" *by* Guisella Gacitúa et al.

Anonymous Referee #2

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General Comments: This manuscript reports the first ice thickness measurements on Schiaparelli glacier, Chile. The paper is well-written and presents a succinct account of recent in-situ measurements performed with a portable, commercial-grade ground penetrating radar system operating at a center frequency of 10 MHz. These are relevant and timely results because studies (and data) on the glaciers of Tierra del Fuego are limited. Glaciers in the Darwing mountain range are hypothesized to respond differently to climatic changes and thus ice thickness measurements such as these are needed to model and understand them better.

Specific comments: I only have the following small suggestions/corrections:

1) Please include a few "A-scope" plots (power vs. depth) for a few range lines shown in the echograms of Fig. 3. It would be helpful to do this for (1) shallow ice (<100 m)

as well as (2) the thickest ice sounded. Such plots will be helpful to estimate the ice attenuation and help guide the performance requirements for future radar surveys of these glaciers.

2) Please include an estimate of the ice losses in dB/km from the above. Comparisons with attenuations observed in other temperate ice glaciers should be included.

3) Small suggestion: Fig. 4, the ice bed profiles are displayed going from B to A (red trace) and then from B to C (blue trace). This helps making a comparison of the bed topography in the first 200 m (where the paths overlap). However, in Fig. 3, the echograms are shown going from A to B and then from C to B. I would recommend orienting the echograms in Fig. 3 to be consistent with the direction shown in Fig. 4.

4) Please confirm that the resolution of the ADC is 32 bits or otherwise clarify. Most commercial ADCs for $\sim$100 MSPS are 14-16 bits (that I am aware of). There are some 24-bit ADCs around, but they have lower sampling rates.

5) Page 3, line 7. There is a missing space between the number and the unit. It should read 24 m instead of 24m.

6) In Fig. 2(b), please mark the operators carrying the transmitter and receiver, respectively.

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