

I would like to thank the anonymous reviewer, the suggestions are very pertinent and the majority was implemented into the corrections improving the quality of the paper. The aspect regarding the processes taking place in AB and B horizons were restricted to the main focus of the paper, the thermal regime of Cryosols from this region, aspects regarding pedological processes as covered more specifically in a different paper "Cryosols and Morphogenetic Considerations from Fildes Peninsula and Ardley Island, Maritime Antarctica".

Paper devoted to the investigation of underestimated climate change affect of active layer dynamic in Anatarctic cryosphere. Data obtained are very important for understanding of periglacial environment and modelling of soil climate. It is nessesary to describe the soil cover, pedodiversity and types of parent material not only for investi-gated plot, but also for different environments of the Fildes peninsula. It is nessesary to specify what authors mean on AB and B horizons (please, define it). Which soil pro- cesses take place in these horizons? Why the are no O and A horizons in soil, formed undes mosses and lichens? Please provide data on skeletal (stone) fraction in soil. Table 2 - plase add 1st collumn "Horizon, depth, cm" instead "depth(cm)".

Page 3, line 22

Please substitute,

The archipelago of the South Shetland Islands, extending more than 400km from southwest to northeast, lies near the northern tip of the Antarctic Peninsula. The archipelago is separated from the Antarctic Peninsula by the Bransfield Strait and from South America by Drake Passage. King George Island is the largest in the archipelago and Fildes Peninsula is at its southwestern end (Fig. 1). This peninsula is about 10 km long and 2–4 km wide. It is washed on three sides by the waters of Drake Passage, Fildes Strait, and Maxwell Bay. Most of the Fildes Peninsula is free of ice; glaciers cover only the extreme northeastern part (Simonov, 1977).

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Please include Smellie, 1984 in the reference list.

Smellie, J.L., Pankhurst, R.J., Thomson, M.R.A., Davies, R.E.S., 1984. The Geology of the South Shetland Islands: VI. Stratigraphy, Geochemistry and Evolution. British Antarctic Survey Scientific Reports, 87, 85, 1984.

Page 4, line 14,

Please include this section regarding the soil cover, pedodiversity not only for investigated plot, but also for different environments of the Fildes peninsula.

Soils in Fildes Peninsula and Ardley Island are well developed for Antarctic standards with large areas of soils with Leptic/Lithic and Skeletic characters. Arenosols/Entisols and Cryosols/Gelisols frequently turbated) are the most important soil classes, while Leptosols/Entisols, Gleysols/Aquents and Cambisols/Inceptisols also occur, all with gelic regime. Faunal activity plays a marked role in soil genesis at Fildes Peninsula and is commonly found in the north shore of the peninsula, prevailing at Ardley Island. The dominant soils in F.P. and A.I., the Cryosols, are related to cryoturbation and active layer processes and developed on wide areas occupied by stone fields, patterned grounds, moraines and slopes on middle, upper platforms and hills in the northern and southern areas (Michel et al, 2014).

Page 12

Please include Michel, 2014 in the reference list.

Michel, R.F.M., Schaefer, C.E.G.R., López-Martínez, J., Simas, F.N.B., Haus, N.W., Serrano E., Bockheim J.G., Soils and landforms from Fildes Peninsula and Ardley Island, Maritime Antarctica, *Geomorphology*, 225, 76-86, 2014.

It is necessary to specify what authors mean on AB and B horizons (please, define it). Which soil processes take place in these horizons? Why there are no O and A horizons in soil, formed under mosses and lichens?

Page 4, line 23

Please Substitute

The characteristics of the monitored site and the exact depth of the probes are presented in Tables 1 and 2, the depth of the probes was established respecting pedological differentiation of horizons. Air temperature was obtained from Marsh automatic metstation, located at Teniente Marsh Air Port.

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The characteristics of the monitored site and the exact depth of the probes are presented in Tables 1 and 2, the depth of the probes was established respecting pedological differentiation of horizons; sites affected by cryoturbation frequently form AB horizons, the intense migration of the organic material in depth associated with the limited carbon input (Mosses and Lichens) difficult the formation of A horizons. Air temperature was obtained from Marsh automatic metstation, located at Teniente Marsh Air Port.

Please provide data on skeletal (stone) fraction in soil. Table 2 - please add 1st column "Horizon, depth, cm" instead "depth(cm)".

Data on skeletal fraction was included in table and the suggestion for the 1<sup>st</sup> column head was incorporated.

Please substitute table 2 with the following,

Table 2: Soil texture of the studied profile.

Horizon Depth (cm)	CS <sup>*</sup>	FS <sup>**</sup>	Silt <sup>***</sup>	Clay <sup>****</sup>	Class	CFS <sup>#</sup>
g/kg						
Fildes - Turbic Haplic Cryosol (Eutric)						
AB 0 – 20	28	18	34	20	Loam	13
B 20 – 50	29	17	36	18	Loam	16
C 50 – 100	14	30	47	9	Loam	19

<sup>\*</sup>Coarse Sand (0.2-<2mm), <sup>\*\*</sup>Fine Sand (0.05-<0,2mm), <sup>\*\*\*</sup> 0.002-<0.05mm, <sup>\*\*\*\*</sup><0.002mm, <sup>#</sup> Coarse Fraction of Soil (>2mm)