Review of Ph.D. thesis " The use of Insects for monitoring global changes“ by Mohamed Ali Abdulassalam M. Kotela.

Ph.D. thesis of Ms Kotela consists from literature review dealing with using of light traps in insect ecology, population dynamics of insects and temperature requirements of insects. The review synthesizes up to date literature about investigated topics and demonstrates ability of candidate critically analyzes literature sources. Core of the works are three ms the first is dealing with effect of climate changes and landscape changes, the second with density dependence in insect population and the last one is focussed on testing of theoretical prediction that thermal window of insect development is about 20^{o}C. All the papers have multiple co-authors but I assume than contribution of Ms Kotela to all the papers was significant. In general presented paper are in style and shape of papers commonly submitted in to international scientific journals and if I would be reviewer of the papers I would have no hesitation to recommend them for publication certainly with some comments. By other words Ms Kotela clearly demonstrated ability for independent scientific work, formulation and analysis scientific question, handle advanced method of data processing and by presented ms, and earlier contribution on scientific meeting he also demonstrated ability to present his findings on level that meet international standard. Considering all this I have no hesitation to suggest Ms. Kotela Ph.D. thesis for final defense

Předkládaná práce demonstruje schopnost Dr Kotely k samostatné vědecké práci, která svou kvalitou snese přísné mezinárodní srovnání. Práci jednoznačně doporučuji k obhajobě.

I have however several questions and comments

My first comments is to title of work only the firs paper deal with global changes in term of long term temperature changes, the other two papers deal with global changes only in very remote way so other title may be more appropriate.

Paper 1
Shannon Wiener index of diversity has been repeatedly criticized for its unrealistic assumption of maximum evenness at the stage where all species occur equally we recently know that natural communities du not behave like this did the author try to use also other indexes of diversity
Author noted that Shannon Wiener index cover both species richness and equitability, did the author try to look at both these components separately, in particular I would be interesting to know if observed changes in diversity were driven mainly by changes in species number or evenness.
Author state in discussion that diversity is better measure that species number per se or abundance it would be however great to confirm this on present dataset.
Author noted that trap was located a south facing wall, however in Fig. 1 position of the trap is apparently asymmetrical in east west direction, why the author decide to ignore changes in east part of the landscape.
Author explained year to year change by habitat change, would not be more straightforward to use habitat area in individual years as explanatory variables instead of years.
During the years growing of human settlements is apparent on southern part of investigated landscape and I would expect the same also on the eastern part, where the city is located. Such settlement usually brings significant use of artificial light in nigh which may compete with light trap. So I would personally account part of the observed changes to decrease in trap efficiency due to increasing light competition.

Paper 2
The same comments as above about light pollution applies here as well.
I am little bit surprised to learn that most of the species did not show any long term trend of abundance, despite significant changes of diversity in most ecological groups mentioned in the first paper. This lead to the question how much are conclusion of this paper about widespread presence of density dependence representative for whole community.

Paper 3.
Paper 3 apparently pass be revision in international journal and seems to me, to be in very good shape. I have only one question. Temperature dependence of insects development is expensively studied so the paper clearly did not cover all available studies. I assume number of studies to be more than sufficient however, I would like to ask how the authors choose empirical studies used to extract Tmin and Tmax.