

the cross point of these lines. If this point is close from the target, it can be said it is dependable.

At last, we evaluate the horizontal position of measured points. This point are shown in Figure10 and Figure11. This result shows two dimensional length of these points is very close.



Figure 7. ImageA and measurement result



Figure 8. ImageC and measurement result

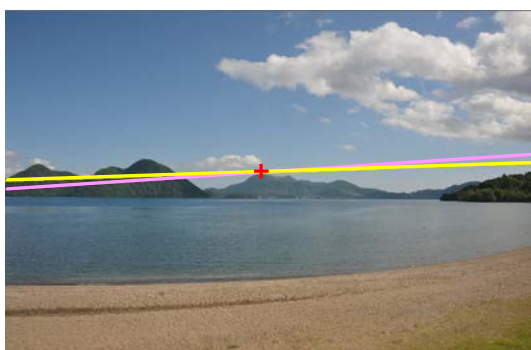


Figure 9. Evaluation of measurement result on ImageB

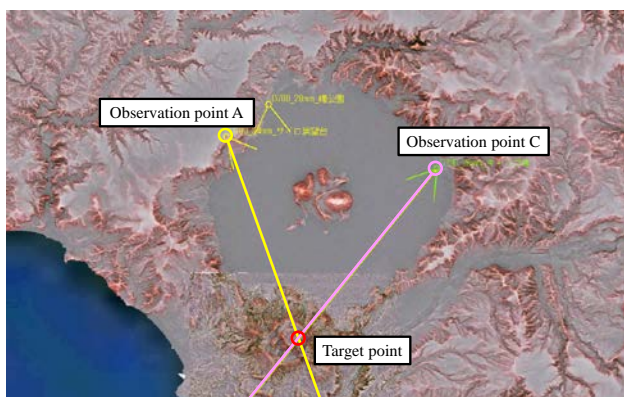


Figure 10. Measurement result (Horizontal position)

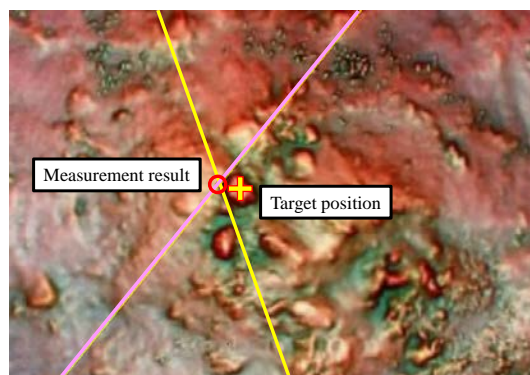


Figure 11. Measurement result (Detail)

4. CONCLUSION

In this paper, we describe the system in which orientation parameter of an image is determined by using DEM, and evaluate this system through measuring the top of Mt. Usu.

The benefits of this system is that we can measure any target on an imagery in short time.

To measure a target, we require about from 5 to 15 minutes for each image as image orientation time. In this evaluation, we can finish all measurement process about in 1 hour. This system is useful to get the preliminary value when a disaster occurs.

This system has two measurement method. One is single image measurement method. In this method, the measurement target is limited, but it is require only one image.

The other method is forward intersection measurement method. In this method, we can measure any targets even if it is in air. And if the target are taken of three or more photographs, we can evaluate the accuracy of the measurement result.

On the other hand, this system is dependent on user's subjectivity, so measurement results are varies.

In our future tasks, there is a ensuring the accuracy of image orientation and supressing the difference of measurement results.

REFERENCES

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