Radiation occurs naturally in bedrock and soil.
- Gamma rays are released from the decay of the radioactive isotopes K, U, and Th.
- Gamma rays observed at the surface come from the first 30 cm of rock and soil.
- Energy of gamma rays is specific to each isotope, allowing identification.

Rock Unit Geochemistry
- AMS data collected from national and regional companies, scientific literature, and field work.
- Data points evaluated for self-consistency.
- A model is created by converting concentrations of U, Th, and K into U and Th in each rock and soil unit.

Drainage Basins
- Model output is compared to model due to their heterogeneity and compositional variation from north to south within the modeling area.
- Drainage basins should separate alluvial units based on source rock instead of age.
- Basins are used to create models for alluvial units.

Remote Sensing Methods
- Project visualization to GCS WGS 1984
- Class visualization into 5 classes for each TRcs and TRcp, creating a possible 10 classes
- AMS and NURE data sorted into the classes
- Compare AMS exposure rate data to NURE model data

Future Work & Acknowledgements

References

AMS Aerial Gamma Survey

AMS vs Geochanical Model

Figure 3: This graph compares the exposure rate measured by AMS for each geologic unit to the exposure rate predicted by our NURE model. Data points are within the shaded yellow range. The best area is either cold or outside the shaded yellow range. The area is divided into blue (inside the range), green (outside the range), and yellow (within or just outside the shaded yellow range).

Figure 10: This graph compares the exposure rate measured by AMS for each geologic unit to the exposure rate predicted by our NURE model with a 50 m buffer. All points are within or just outside the shaded yellow range. The best area is either cold or outside the shaded yellow range. The area is divided into blue (inside the range), green (outside the range), and yellow (within or just outside the shaded yellow range).

Figure 11: This graph compares the exposure rate measured by AMS for each geologic unit to the exposure rate predicted by our BMsurvey Model with 50 m buffer. All points are within the shaded yellow range. The best area is either cold or outside the shaded yellow range. The area is divided into blue (inside the range), green (outside the range), and yellow (within or just outside the shaded yellow range).

Figure 12: This graph compares the exposure rate measured by AMS for each geologic unit to the exposure rate predicted by our BMsurvey Model. All points are within the shaded yellow range. The best area is either cold or outside the shaded yellow range. The area is divided into blue (inside the range), green (outside the range), and yellow (within or just outside the shaded yellow range).